TOSHIBA

FILE NO. 813-200104
SUPPLEMENT

SERVICE MANUAL

DVD VIDEO/AUDIO PLAYER

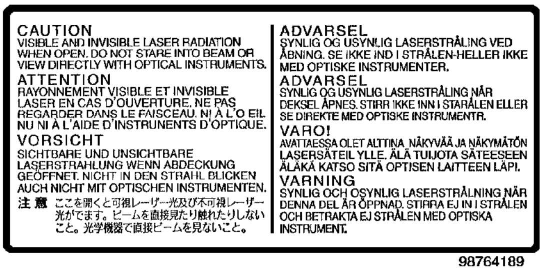
SD-4700
SD-5700

– SUMMARY –

This service manual covers only the different points from the service manual, file no. 810-200108, for model SD-3750 since SD-4700, SD-5700 is basically the same designing as SD-3750.
Please refer to the file no. 810-200108 for other information.

Jan., 2002 Ⓢ

LASER BEAM CAUTION LABEL



CAUTION
VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. DO NOT STARE INTO BEAM OR VIEW DIRECTLY WITH OPTICAL INSTRUMENTS.

ATTENTION
RAYONNEMENT VISIBLE ET INVISIBLE LASER EN CAS D'OUVERTURE. NE PAS REGARDER DANS LE FAISCEAU. NI À L'O EIL NU NI À L'AIDE D'INSTRUNENTS D'OPTIQUE.

VORSICHT
SICHTBARE UND UNSICHTBARE LASERSTRAHLUNG WENN ABDECKUNG GEÖFFNET. NICHT IN DEN STRAHL BLICKEN AUCH NICHT MIT OPTISCHEN INSTRUMENTEN.

注 意　ここを開くと可視レーザー光及び不可視レーザー光がでます。ビームを直接見たり触れたりしないこと。光学機器で直接ビームを見ないこと。

ADVARSEL
SYNLIG OG USYNLIG LASERSTRÅLING VED ÅBNING. SE IKKE IND I STRÅLEN-HELLER IKKE MED OPTISKE INSTRUMENTER.

ADVARSEL
SYNLIG OG USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES. STIRR IKKE INN I STARÅLEN ELLER SE DIREKTE MED OPTISKE INSTRUMENTR.

VARO!
AVATTAESSA OLET ALTTINA NÄKYVÄÄ JA NÄKYMÄTÖN LASERSÄTEIL YLLE. ÄLÄ TUIJOTA SÄTEESEEN ÄLÄKÄ KATSO SITÄ OPTISEN LAITTEEN LÄPI.

VARNING
SYNLIG OCH OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD. STIRRA EJ IN I STRÅLEN OCH BETRAKTA EJ STRÅLEN MED OPTISKA INSTRUMENT.

98764189

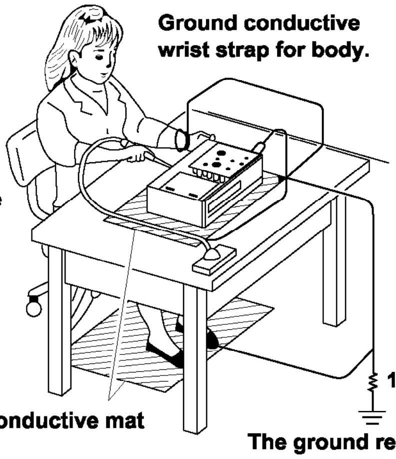
When the power supply is being turned on, you may not remove this laser cautions label. If it removes, radiation of a laser may be recceived.

PREPARATION OF SERVICING

Pickup Head consists of a laser diode that is very susceptible to external static electricity.

Although it operates properly after replacement, if it was subject to electrostatic discharge during replacement, its life might be shortened. When replacing, use a conductive mat, soldering iron with ground wire, etc. to protect the laser diode from damage by static electricity.

And also, the LSI and IC are same as above.


Ground conductive wrist strap for body.
Soldering iron with ground wire or ceramic type
1MΩ
Conductive mat
The ground resistance between the ground line and the ground is less than 10Ω.

Note:

HDCD® **: Only for SD-5700.**

SD-4700 is not provided with HDCD decoder.

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NOTICE
ABBREVIATIONS
   1. Integrated Circuit (IC)
   2. Capacitor (Cap)
   3. Resistor (Res)
4. EXPLODED VIEWS
   4-1. Packing Assembly
   4-2. Chassis Assembly
   4-3. Mechanism Assembly
5. PARTS LIST

Output Block Diagram

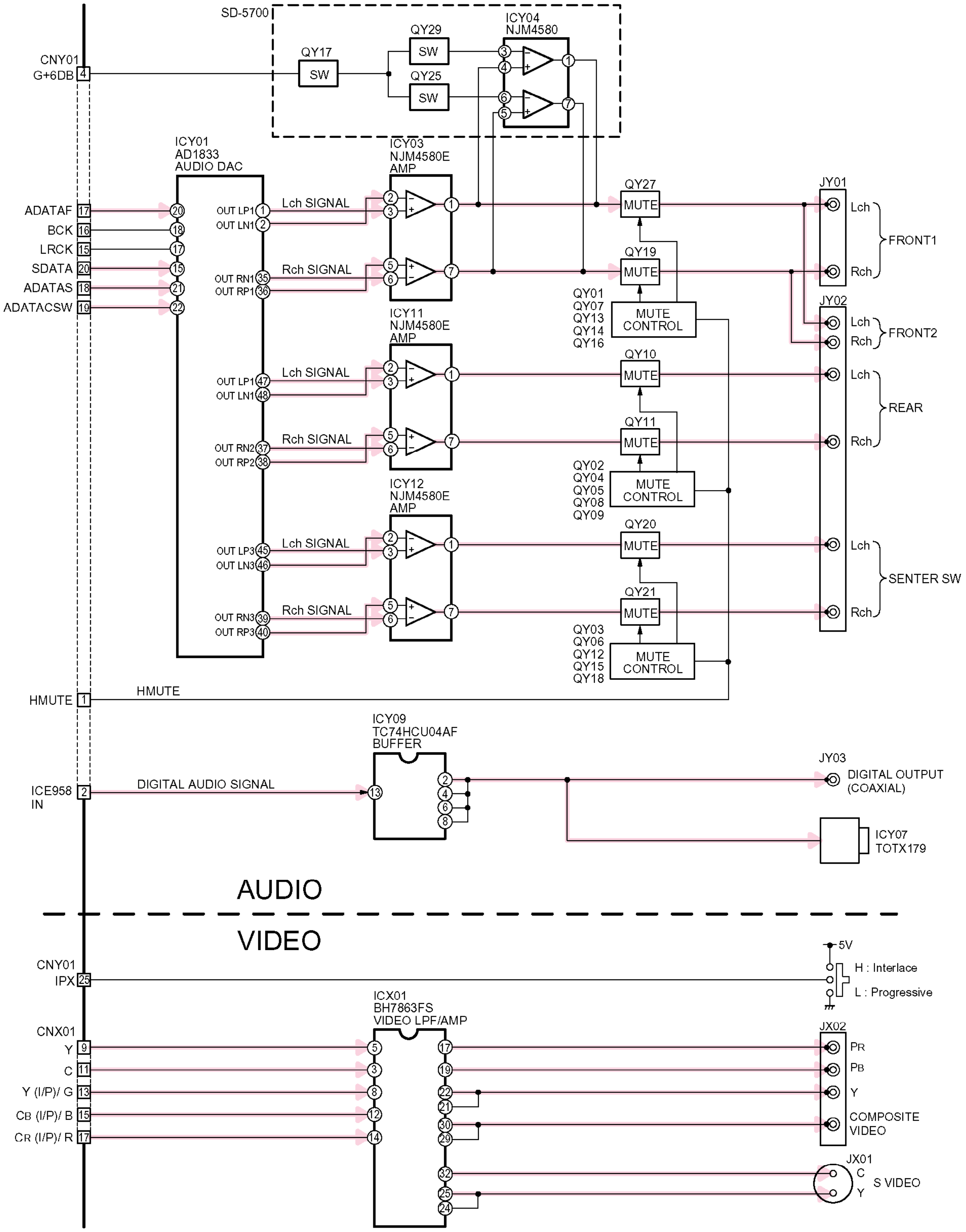
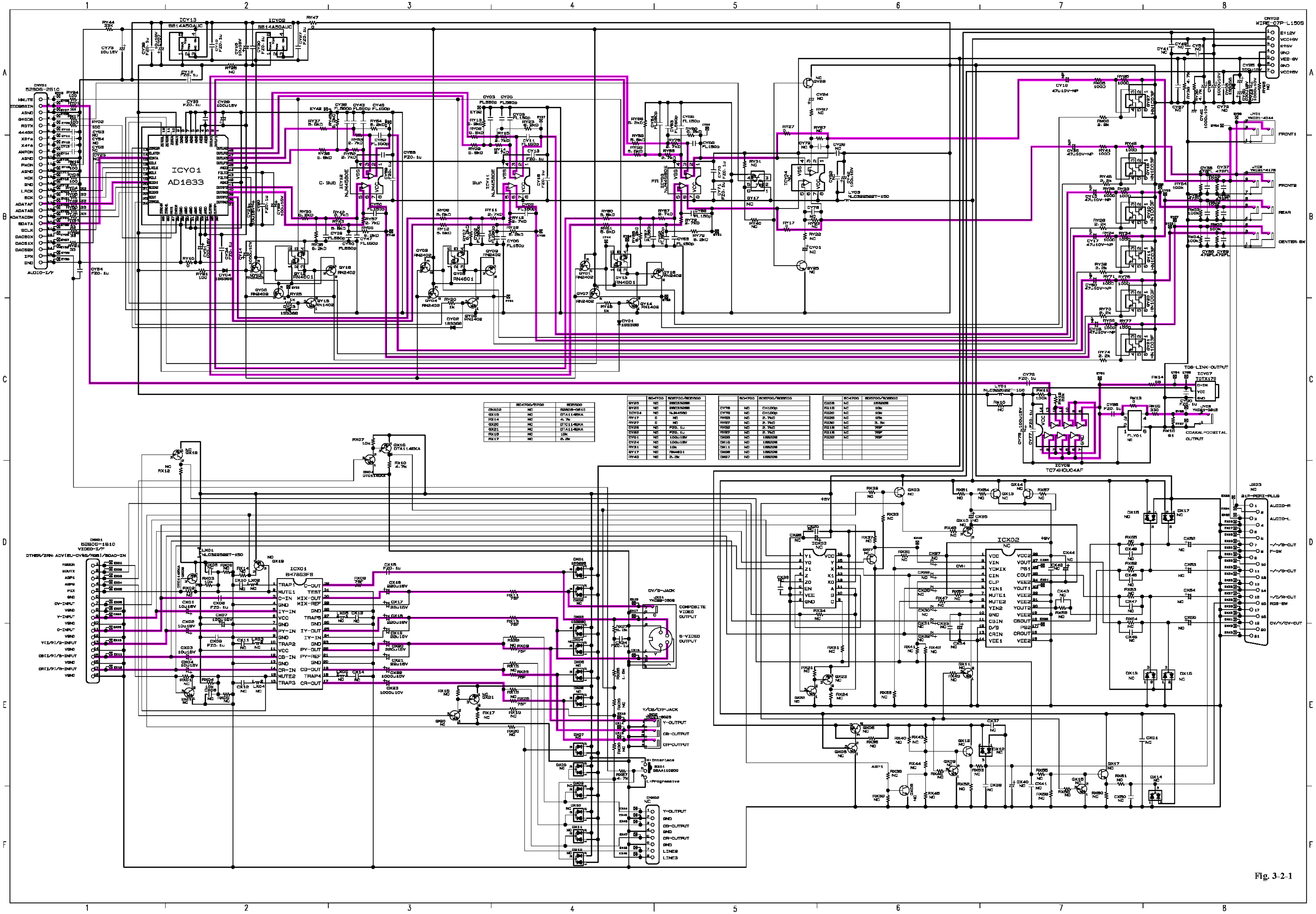

SD-5700
QY17
SW
QY29
SW
QY25
SW
ICY04
NJM4580
CNY01
G+6DB 4
ICY01
AD1833
AUDIO DAC
ICY03
NJM4580E
AMP
ADATAF 17
BCK 16
LRCK 15
SDATA 20
ADATAS 18
ADATACSW 19
OUT LP1
OUT LN1
OUT RN1
OUT RP1
Lch SIGNAL
Rch SIGNAL
QY27
MUTE
QY19
MUTE
QY01
QY07
QY13
QY14
QY16
MUTE CONTROL
JY01
Lch
Rch
FRONT1
JY02
Lch
Rch
FRONT2
ICY11
NJM4580E
AMP
OUT LP1
OUT LN1
OUT RN2
OUT RP2
QY10
MUTE
QY11
MUTE
QY02
QY04
QY05
QY08
QY09
MUTE CONTROL
Lch
Rch
REAR
ICY12
NJM4580E
AMP
OUT LP3
OUT LN3
OUT RN3
OUT RP3
QY20
MUTE
QY21
MUTE
QY03
QY06
QY12
QY15
QY18
MUTE CONTROL
Lch
Rch
SENTER SW
HMUTE 1
HMUTE
ICY09
TC74HCU04AF
BUFFER
ICE958 IN 2
DIGITAL AUDIO SIGNAL
JY03
DIGITAL OUTPUT (COAXIAL)
ICY07
TOTX179
AUDIO
VIDEO
CNY01
IPX 25
5V
H : Interlace
L : Progressive
ICX01
BH7863FS
VIDEO LPF/AMP
CNX01
Y 9
C 11
Y (I/P)/ G 13
CB (I/P)/ B 15
CR (I/P)/ R 17
JX02
PR
PB
Y
COMPOSITE VIDEO
JX01
C
Y
S VIDEO

Fig. 3-1-1

Output Circuit Diagram



	SD4700/5700	SD5500
CNX02	NC	52808-0810
QX19	NC	DTA114EKA
RX14	NC	4.7k
QX20	NC	DTC114EKA
QX21	NC	DTA114EKA
RX16	NC	10k
RX17	NC	8.2k

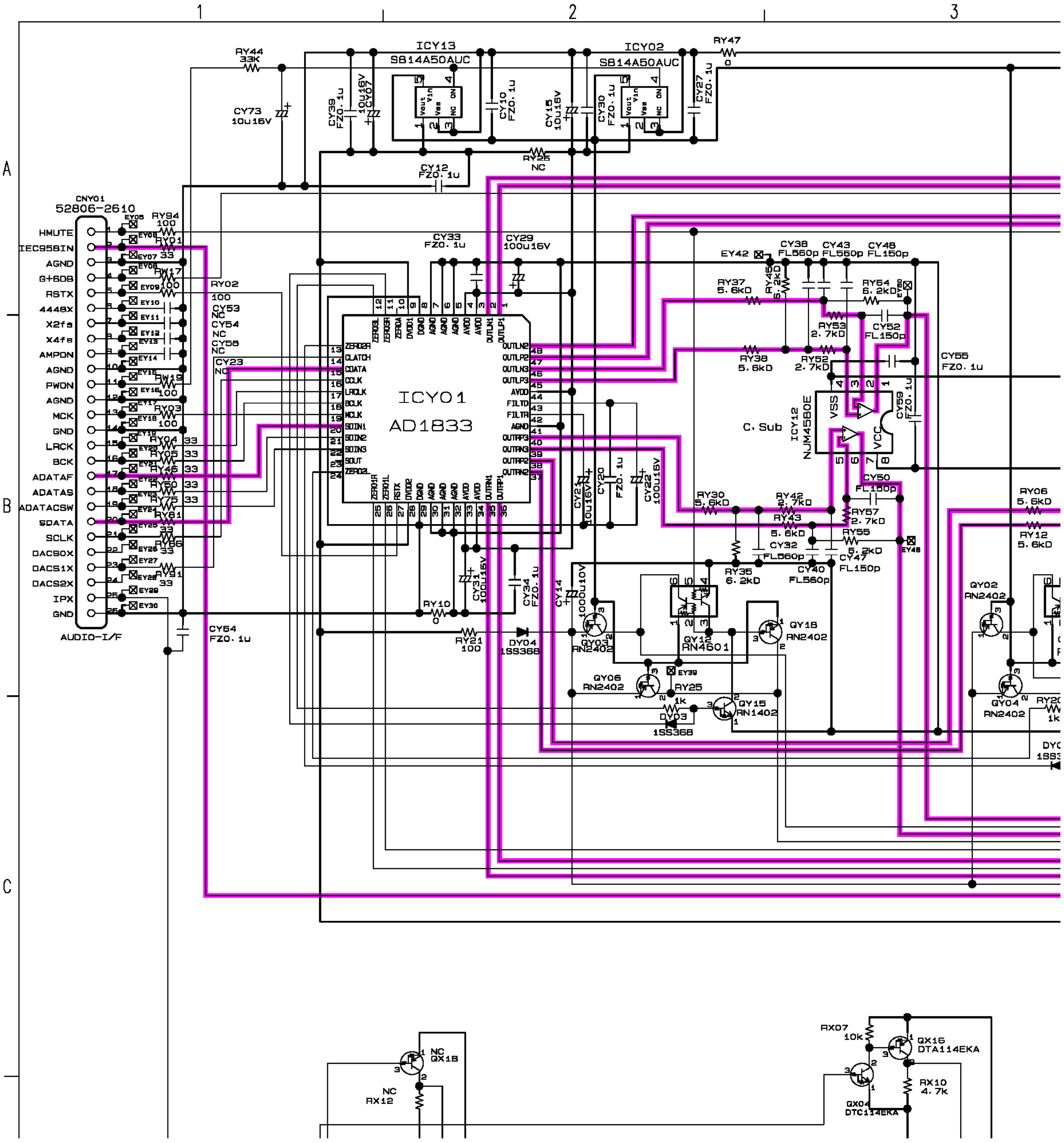
	SD4700	SD6700/SD5500
QY25	NC	2SC3326B
QY28	NC	2SC3326B
ICY04	NC	NJM4580
RY17	0	NC
RY27	0	NC
CY26	NC	FZ0.1u
CY82	NC	FZ0.1u
CY01	NC	100u16V
CY24	NC	100u16V
RY31	NC	10k
QY17	NC	RN4601
RY40	NC	2.2k

	SD4700	SD6700/SD5500
CY76	NC	CH100p
CY78	NC	CH100p
RY63	NC	2.7kΩ
RY67	NC	2.7kΩ
RY22	NC	2.7kΩ
RY87	NC	2.7kΩ
DX08	NC	1SS226
DX10	NC	1SS226
DX11	NC	1SS226
DX06	NC	1SS226
DX07	NC	1SS226

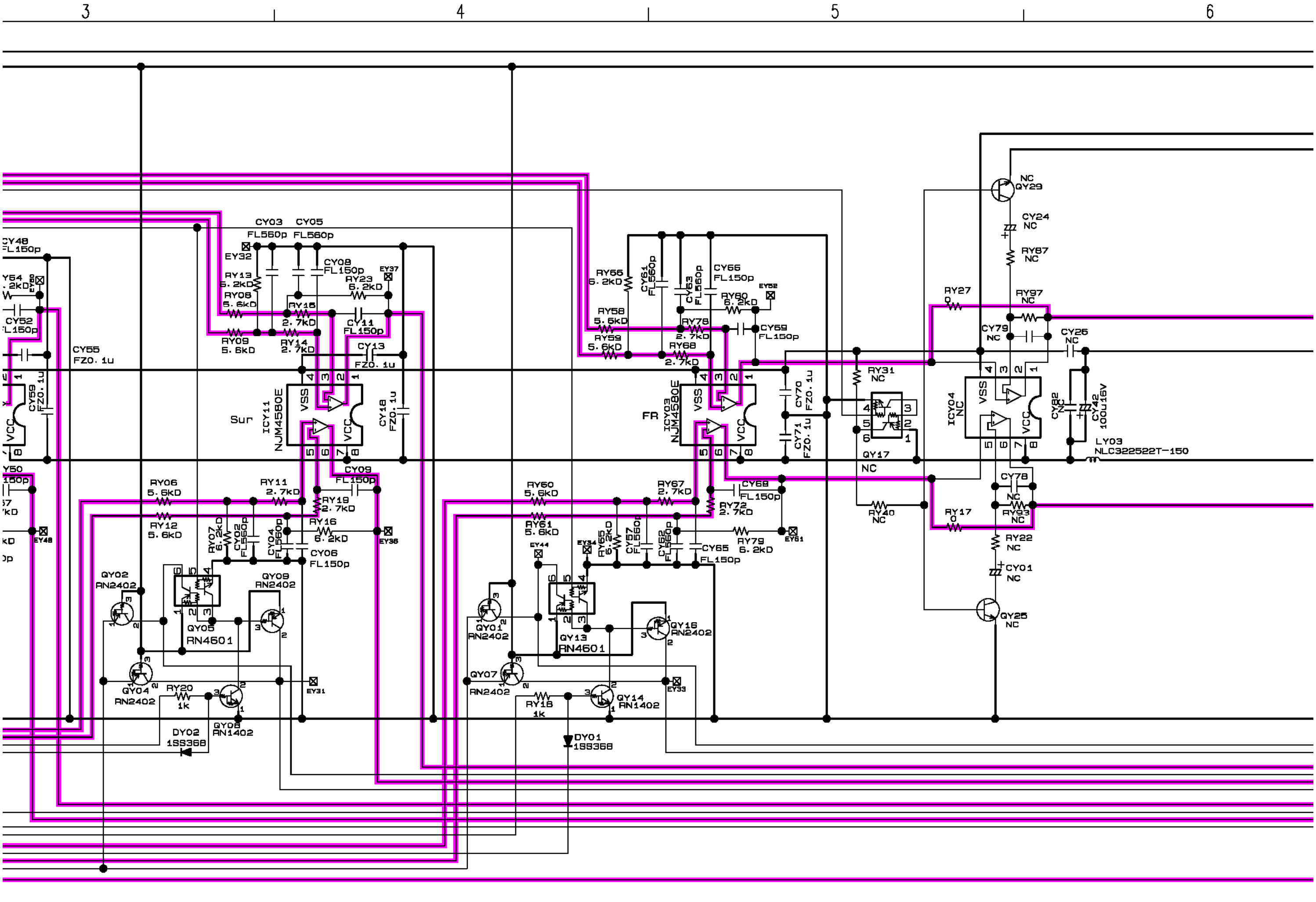
	SD4700	SD6700/SD5500
DX05	NC	1SS226
RX18	NC	10k
RX20	NC	10k
RX28	NC	15k
RX30	NC	3.3k
RX15	NC	75F
RX16	NC	75F
RX22	NC	75F

Fig. 3-2-1

Output Circuit Diagram



1
2
3
A
B
C
CNY01
52806-2610
HMUTE
IEC958IN
AGND
G+6DB
RSTX
448X
X2fs
X4fs
AMPON
AGND
PWON
AGND
MCK
GND
LRCK
BCK
ADATAF
ADATAS
ADATACSW
SDATA
SCLK
DACS0X
DACS1X
DACS2X
IPX
GND
AUDIO-I/F
RY44 33K
CY73 10u16V
CY39 FZ0.1u
CY07 10u16V
ICY13
S814A50AUC
Vout
Vin
Vss
NC
ON
CY10 FZ0.1u
CY15 10u16V
CY30 FZ0.1u
ICY02
S814A50AUC
CY27 FZ0.1u
RY47 0
CY12 FZ0.1u
RY26 NC
RY94 100
RY01 33
RW17
RY02 100
CY53 NC
CY54 NC
CY58 NC
CY23 NC
RW19 100
RY03 100
RY04 33
RY05 33
RY46 33
RY50 33
RY75 33
RY61 33
RY66 33
RY31 33
CY33 FZ0.1u
CY29 100u16V
ICY01
AD1833
ZERO3L
ZERO3R
ZEROA
DVDD1
DGND
AGND
AVDD
OUTLM1
OUTLP1
ZERO2R
CLATCH
CDATA
CCLK
LRCLK
BCLK
MCLK
SDIN1
SDIN2
SDIN3
SOUT
ZERO2L
ZERO1R
ZERO1L
RSTX
DVDD2
OUTRN1
OUTRP1
OUTLN2
OUTLP2
OUTLN3
OUTLP3
FILTD
FILTR
OUTRP3
OUTRN3
OUTRP2
OUTRN2
CY31 100u16V
CY34 FZ0.1u
CY54 FZ0.1u
RY10 0
RY21 100
DY04 1SS368
CY21 10u16V
CY20 FZ0.1u
CY22 100u16V
CY14 1000u10V
EY42
CY38 FL560p
CY43 FL560p
CY48 FL150p
RY37 5.6kΩ
RY45 6.2kΩ
RY54 6.2kΩ
RY53 2.7kΩ
CY52 FL150p
RY38 5.6kΩ
RY52 2.7kΩ
CY55 FZ0.1u
C. Sub
ICY12
NJM4580E
VSS
VCC
CY59 FZ0.1u
CY50 FL150p
RY30 5.6kΩ
RY42 2.7kΩ
RY43 5.6kΩ
RY57 2.7kΩ
RY55 5.2kΩ
CY32 FL560p
CY47 FL150p
CY40 FL560p
RY35 6.2kΩ
EY48
QY03 RN2402
QY12 RN4601
QY16 RN2402
QY06 RN2402
EY39
RY25 1k
QY15 RN1402
DY03 1SS368
RY06 5.6kΩ
RY12 5.6kΩ
QY02 RN2402
QY04 RN2402
RY20 1k
NC
QX18
NC
RX12
RX07 10k
QX16 DTA114EKA
RX10 4.7k
QX04 DTC114EKA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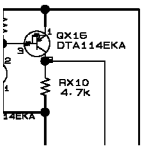
4
5
6
CY48
FL150p
Y54
.2kD
EY50
CY52
FL150p
CY55
FZ0.1u
CY59
FZ0.1u
VCC
Y50
150p
EY48
CY03
CY05
FL560p
FL560p
EY32
RY13
6.2kD
RY08
5.6kD
RY09
5.6kD
CY08
FL150p
EY37
RY23
6.2kD
RY15
2.7kD
RY14
2.7kD
CY11
FL150p
CY13
FZ0.1u
CY18
FZ0.1u
Sur
ICY11
NJM4580E
VSS
VCC
CY09
FL150p
RY06
5.6kD
RY12
5.6kD
RY11
2.7kD
RY19
2.7kD
RY16
6.2kD
EY36
RY07
6.2kD
CY02
FL560p
CY04
FL560p
CY06
FL150p
QY02
RN2402
QY05
RN4601
QY09
RN2402
QY04
RN2402
RY20
1k
QY08
RN1402
EY31
DY02
1SS368
RY55
6.2kD
CY61
FL560p
CY63
FL560p
CY66
FL150p
EY52
RY80
6.2kD
RY58
5.6kD
RY59
5.6kD
RY78
2.7kD
RY68
2.7kD
CY69
FL150p
FR
ICY03
NJM4580E
CY70
FZ0.1u
CY71
FZ0.1u
RY60
5.6kD
RY61
5.6kD
RY67
2.7kD
RY72
2.7kD
CY68
FL150p
RY79
6.2kD
EY61
EY44
EY34
RY65
6.2kD
CY57
FL560p
CY62
FL560p
CY65
FL150p
QY01
RN2402
QY13
RN4601
QY16
RN2402
QY07
RN2402
RY18
1k
QY14
RN1402
EY33
DY01
1SS368
NC
QY29
CY24
NC
RY87
NC
RY27
0
RY97
NC
CY79
NC
CY26
NC
RY31
NC
QY17
NC
ICY04
NC
CY82
NC
CY42
100u16V
LY03
NLC322522T-150
CY78
NC
RY40
NC
RY17
0
RY93
NC
RY22
NC
CY01
NC
QY25
NC

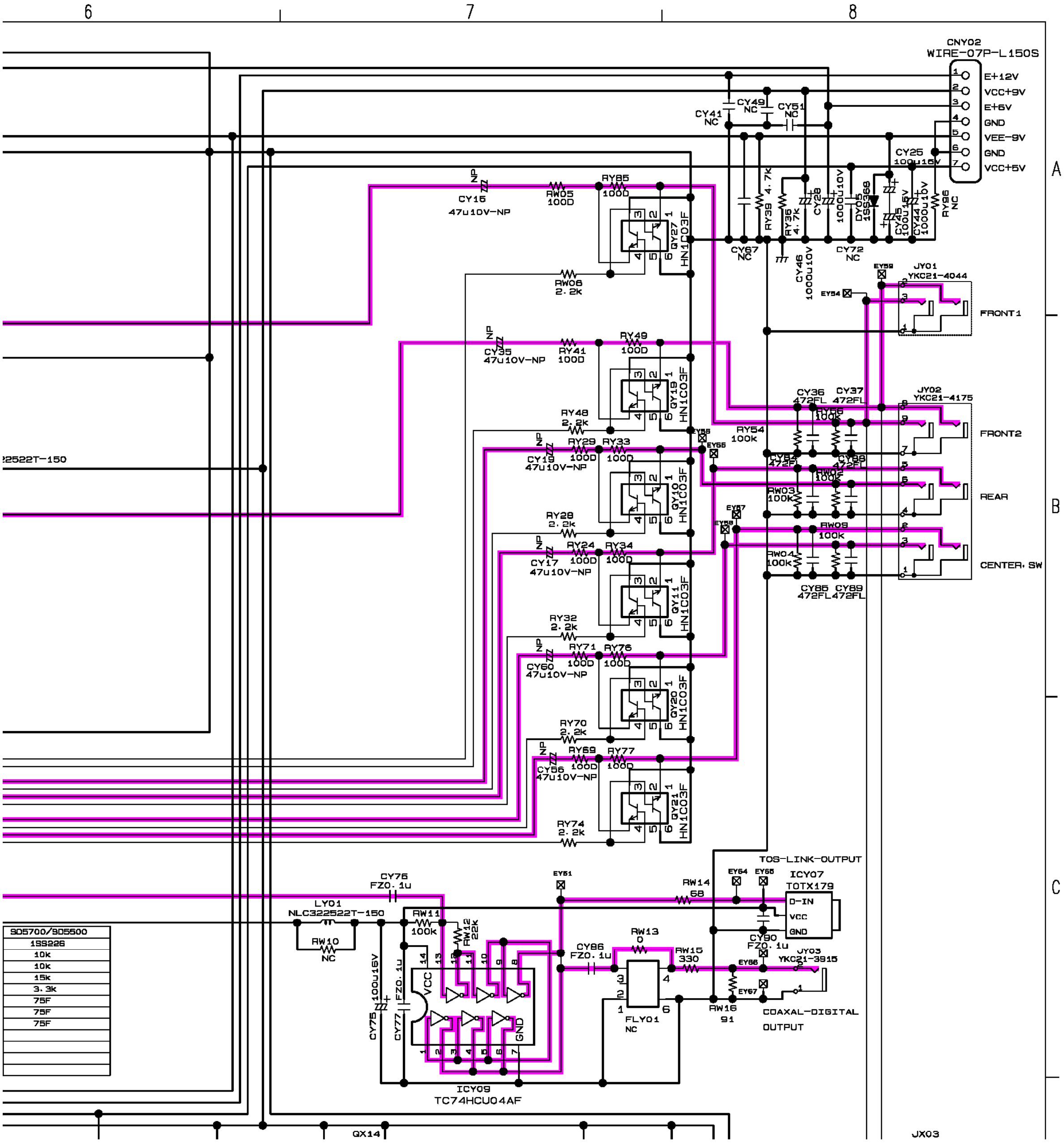
	SD4700/5700	SD5500
CNX02	NC	52806-0810
QX19	NC	DTA114EKA
RX14	NC	4.7k
QX20	NC	DTC114EKA
QX21	NC	DTA114EKA
RX15	NC	10k
RX17	NC	2.2k

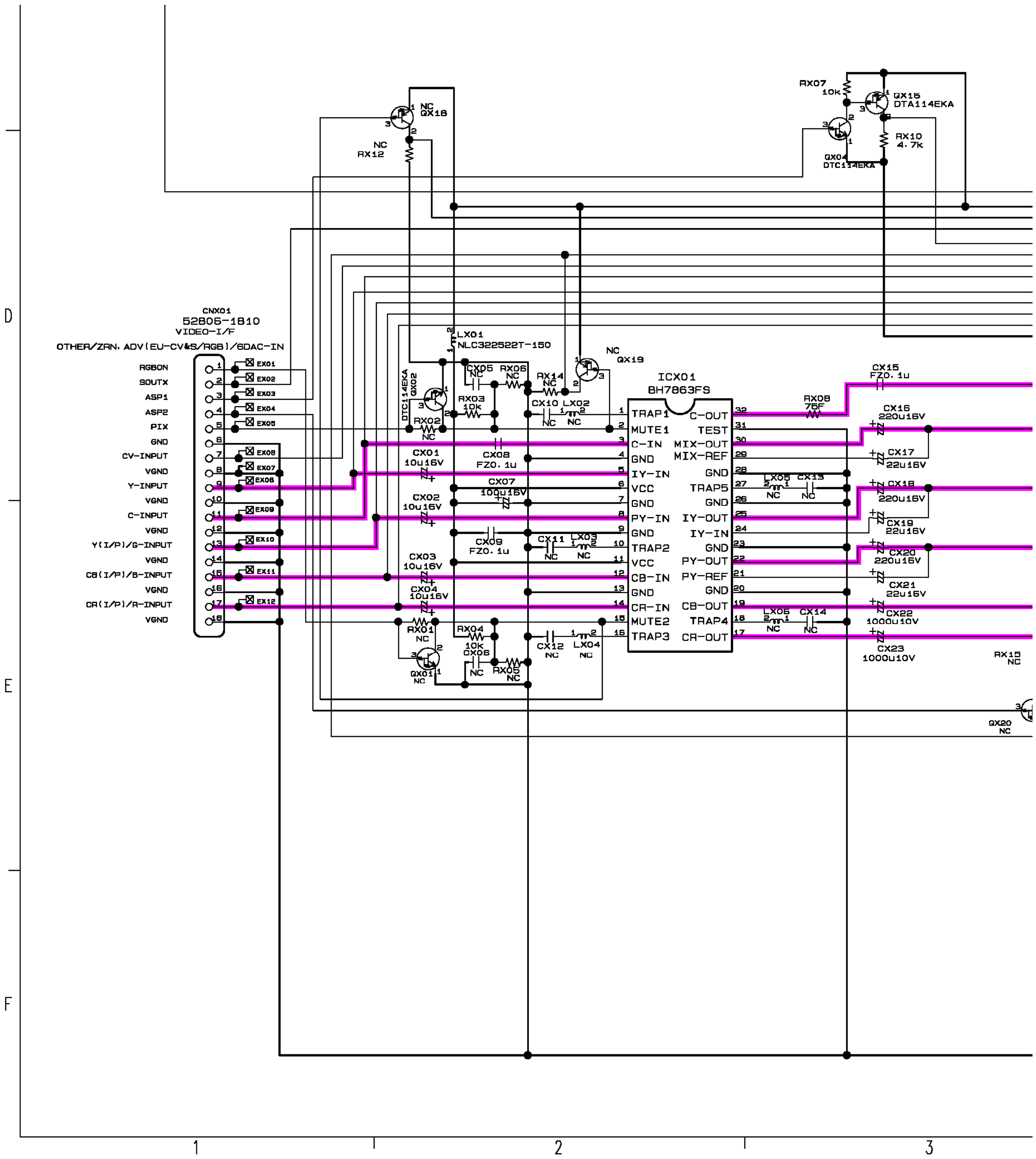
	SD4700	SD5700/SD5500
QY25	NC	2SC3326B
QY29	NC	2SC3326B
ICY04	NC	NJM4580
RY17	0	NC
RY27	0	NC
CY26	NC	FZ0.1u
CY82	NC	FZ0.1u
CY01	NC	100u16V
CY24	NC	100u16V
RY31	NC	10k
QY17	NC	RN4601
RY40	NC	2.2k

	SD4700	SD5700/SD5500
CY78	NC	CH100p
CY79	NC	CH100p
RY93	NC	2.7kD
RY97	NC	2.7kD
RY22	NC	2.7kD
RY87	NC	2.7kD
DX09	NC	1SS226
DX10	NC	1SS226
DX11	NC	1SS226
DX06	NC	1SS226
DX07	NC	1SS226

	SD4700	SD5700/SD5500
DX08	NC	1SS226
RX19	NC	10k
RX20	NC	10k
RX29	NC	15k
RX30	NC	3.3k
RX18	NC	75F
RX16	NC	75F
RX22	NC	75F


QX16
DTA114EKA
RX10
4.7k
14EKA


6
7
8
A
B
C
CNY02
WIRE-07P-L150S
E+12V
VCC+9V
E+6V
GND
VEE-9V
GND
VCC+5V
CY41 NC
CY49 NC
CY51 NC
CY25 100u16V
CY16 47u10V-NP
RW05 100D
RY85 100D
QY27 HN1C03F
RY39 4.7K
RY35 4.7K
CY28
DY05 1SS268
CY45 100u16V
CY44 1000u10V
RY96 NC
CY67 NC
CY46 1000u10V
CY72 NC
RW06 2.2K
EY53
JY01 YKC21-4044
EY54
FRONT1
CY35 47u10V-NP
RY41 100D
RY49 100D
QY19 HN1C03F
CY36 472FL
CY37 472FL
JY02 YKC21-4175
RY56 100K
RY54 100K
FRONT2
RY48 2.2K
EY56
EY55
CY19 47u10V-NP
RY29 100D
RY33 100D
CY62 472FL
CY99 472FL
RW02 100K
QY10 HN1C03F
RW03 100K
REAR
RY28 2.2K
EY57
EY58
RW09 100K
CY17 47u10V-NP
RY24 100D
RY34 100D
RW04 100K
CENTER, SW
CY86 472FL
CY89 472FL
QY11 HN1C03F
RY32 2.2K
CY60 47u10V-NP
RY71 100D
RY76 100D
QY20 HN1C03F
RY70 2.2K
CY56 47u10V-NP
RY69 100D
RY77 100D
QY21 HN1C03F
RY74 2.2K
22522T-150
NP
TOS-LINK-OUTPUT
CY76 FZ0.1u
EY51
RW14 68
EY64
EY65
ICY07
TOTX179
D-IN
VCC
GND
LY01
NLC322522T-150
RW11 100k
RW12 22k
CY86 FZ0.1u
RW13 0
RW15 330
CY90 FZ0.1u
JY03
YKC21-3915
RW10 NC
CY75 100u16V
CY77 FZ0.1u
VCC
GND
EY66
EY67
FLY01 NC
RW16 91
COAXAL-DIGITAL OUTPUT
ICY09
TC74HCU04AF
SD5700/SD5500
1SS226
10k
10k
15k
3.3k
75F
75F
75F
QX14
JX03



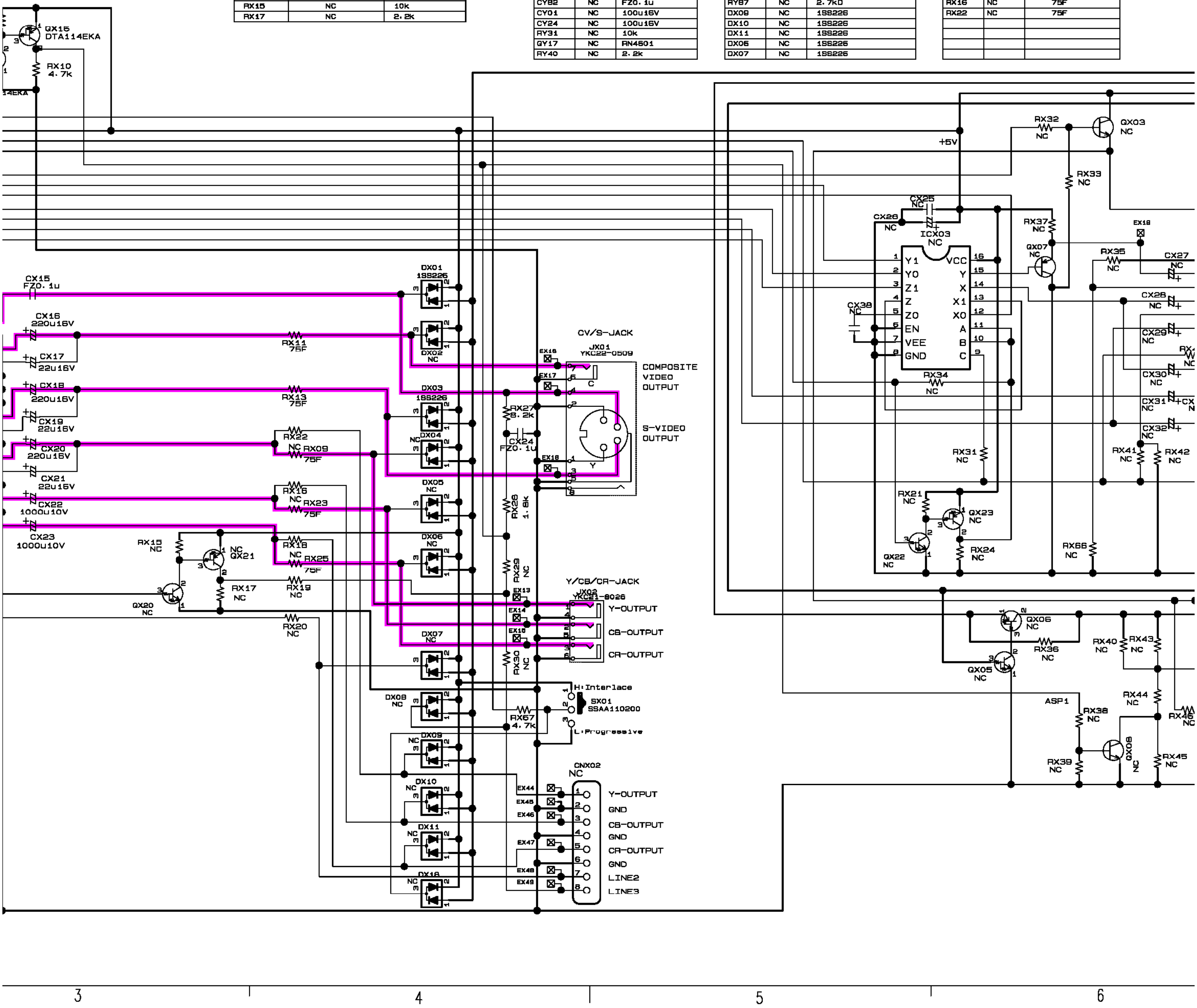
D
E
F
1
2
3
CNX01
52806-1810
VIDEO-I/F
OTHER/ZRN,ADV(EU-CV&S/RGB)/6DAC-IN
RGBON
SOUTX
ASP1
ASP2
PIX
GND
CV-INPUT
VGND
Y-INPUT
VGND
C-INPUT
VGND
Y(I/P)/G-INPUT
VGND
CB(I/P)/B-INPUT
VGND
CR(I/P)/R-INPUT
VGND
EX01
EX02
EX03
EX04
EX05
EX08
EX07
EX06
EX09
EX10
EX11
EX12
NC
QX18
NC
RX12
LX01
NLC322522T-150
DTC114EKA
QX02
CX05
NC
RX06
NC
RX03
10k
RX02
NC
RX14
NC
CX10
NC
LX02
NC
NC
QX19
CX01
10u16V
CX08
FZ0.1u
CX07
100u16V
CX02
10u16V
CX09
FZ0.1u
CX11
NC
LX03
NC
CX03
10u16V
CX04
10u16V
RX01
NC
RX04
10k
CX06
NC
RX05
NC
QX01
NC
CX12
NC
LX04
NC
ICX01
BH7863FS
TRAP1
MUTE1
C-IN
GND
IY-IN
VCC
GND
PY-IN
GND
TRAP2
VCC
CB-IN
GND
CR-IN
MUTE2
TRAP3
C-OUT
TEST
MIX-OUT
MIX-REF
GND
TRAP5
GND
IY-OUT
IY-IN
GND
PY-OUT
PY-REF
GND
CB-OUT
TRAP4
CR-OUT
RX07
10k
QX15
DTA114EKA
RX10
4.7k
QX04
DTC114EKA
RX08
75F
CX15
FZ0.1u
CX16
220u16V
CX17
22u16V
LX05
NC
CX13
NC
CX18
220u16V
CX19
22u16V
CX20
220u16V
CX21
22u16V
LX06
NC
CX14
NC
CX22
1000u10V
CX23
1000u10V
RX15
NC
QX20
NC

CNX02	NC	52806-0810
QX19	NC	DTA114EKA
RX14	NC	4.7k
QX20	NC	DTC114EKA
QX21	NC	DTA114EKA
RX15	NC	10k
RX17	NC	2.2k

QY29	NC	2SC3326B
ICY04	NC	NJM4580
RY17	0	NC
RY27	0	NC
CY26	NC	FZ0.1u
CY82	NC	FZ0.1u
CY01	NC	100u16V
CY24	NC	100u16V
RY31	NC	10k
QY17	NC	RN4601
RY40	NC	2.2k

CY78	NC	CH100p
CY79	NC	CH100p
RY93	NC	2.7kD
RY97	NC	2.7kD
RY22	NC	2.7kD
RY87	NC	2.7kD
DX09	NC	1SS226
DX10	NC	1SS226
DX11	NC	1SS226
DX06	NC	1SS226
DX07	NC	1SS226

RX19	NC	10k
RX20	NC	10k
RX29	NC	15k
RX30	NC	3.3k
RX18	NC	75F
RX16	NC	75F
RX22	NC	75F


QX15
DTA114EKA
RX10
4.7k
14EKA
CX15
FZ0.1u
CX16
220u16V
CX17
22u16V
CX18
220u16V
CX19
22u16V
CX20
220u16V
CX21
22u16V
CX22
1000u10V
CX23
1000u10V
RX11
75F
RX13
75F
RX22
NC
RX09
75F
RX16
NC
RX23
75F
RX18
NC
RX25
75F
RX19
NC
RX20
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RX15
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QX21
RX17
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DX02
NC
DX03
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DX04
NC
DX05
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DX06
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DX07
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DX08
NC
DX09
NC
DX10
NC
DX11
NC
DX16
NC
CV/S-JACK
JX01
YKC22-0509
COMPOSITE
VIDEO
OUTPUT
S-VIDEO
OUTPUT
C
Y
EX16
EX17
EX18
RX27
8.2k
CX24
FZ0.1u
RX28
1.8k
RX29
NC
RX30
NC
Y/CB/CR-JACK
JX02
YKC21-8026
Y-OUTPUT
CB-OUTPUT
CR-OUTPUT
EX13
EX14
EX15
H:Interlace
SX01
SSAA110200
L:Progressive
RX67
4.7k
CNX02
NC
EX44
EX45
EX46
EX47
EX48
EX49
Y-OUTPUT
GND
CB-OUTPUT
GND
CR-OUTPUT
GND
LINE2
LINE3
+5V
RX32
NC
QX03
NC
RX33
NC
CX25
NC
CX26
NC
ICX03
NC
Y1
Y0
Z1
Z
Z0
EN
VEE
GND
VCC
Y
X
X1
X0
A
B
C
CX38
NC
RX34
NC
RX37
NC
QX07
NC
EX19
RX35
NC
CX27
NC
CX28
NC
CX29
NC
CX30
NC
CX31
NC
CX32
NC
RX31
NC
RX21
NC
QX23
NC
QX22
NC
RX24
NC
RX66
NC
RX41
NC
RX42
NC
QX06
NC
RX36
NC
QX05
NC
RX40
NC
RX43
NC
ASP1
RX38
NC
RX39
NC
QX08
NC
RX44
NC
RX45
NC
RX46
NC
3
4
5
6

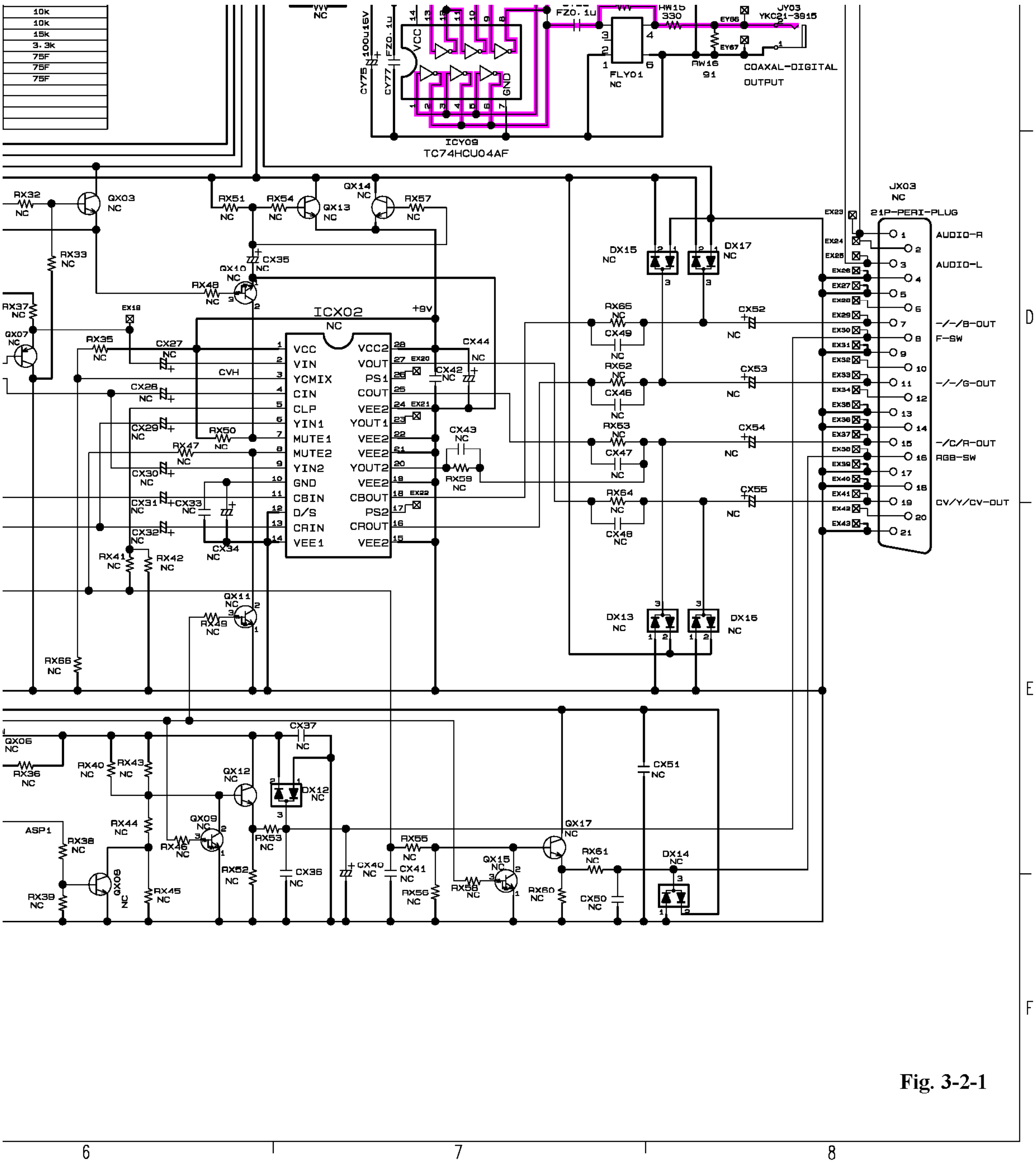
10k
10k
15k
3.3k
75F
75F
75F
CY75 100u16V
CY77 FZ0.1u
VCC
GND
ICY09
TC74HCU04AF
FZ0.1u
FLY01
NC
RW15
330
RW16
91
EY66
EY67
JY03
YKC21-3915
COAXAL-DIGITAL
OUTPUT
RX32 NC
QX03 NC
RX33 NC
RX37 NC
QX07 NC
RX51 NC
RX54 NC
QX13 NC
QX14 NC
RX57 NC
CX35 NC
QX10 NC
RX48 NC
EX18
RX35 NC
CX27 NC
CX28 NC
CX29 NC
RX47 NC
RX50 NC
CX30 NC
CX31 NC
CX33 NC
CX32 NC
CX34 NC
RX41 NC
RX42 NC
ICX02
NC
+9V
CVH
VCC
VIN
YCMIX
CIN
CLP
YIN1
MUTE1
MUTE2
YIN2
GND
CBIN
D/S
CRIN
VEE1
VCC2
VOUT
PS1
COUT
VEE2
YOUT1
VEE2
VEE2
YOUT2
VEE2
CBOUT
PS2
CROUT
VEE2
EX20
EX21
EX22
CX42 NC
CX44 NC
CX43 NC
RX59 NC
QX11 NC
RX49 NC
RX66 NC
DX15 NC
DX17 NC
RX65 NC
CX49 NC
RX62 NC
CX46 NC
RX53 NC
CX47 NC
RX64 NC
CX48 NC
CX52 NC
CX53 NC
CX54 NC
CX55 NC
DX13 NC
DX16 NC
JX03
NC
21P-PERI-PLUG
EX23
EX24
EX25
EX26
EX27
EX28
EX29
EX30
EX31
EX32
EX33
EX34
EX35
EX36
EX37
EX38
EX39
EX40
EX41
EX42
EX43
AUDIO-R
AUDIO-L
-/-/B-OUT
F-SW
-/-/G-OUT
-/C/R-OUT
RGB-SW
CV/Y/CV-OUT
QX06 NC
RX36 NC
RX40 NC
RX43 NC
CX37 NC
QX12 NC
DX12 NC
ASP1
RX38 NC
RX39 NC
QX08 NC
RX44 NC
QX09 NC
RX46 NC
RX45 NC
RX52 NC
RX53 NC
CX36 NC
CX40 NC
CX41 NC
RX55 NC
RX56 NC
RX58 NC
QX15 NC
QX17 NC
RX60 NC
RX61 NC
CX50 NC
CX51 NC
DX14 NC
D
E
F
6
7
8

Fig. 3-2-1

SECTION 4
PARTS LIST

SAFETY PRECAUTION

The parts identified by ! (⚠) mark are critical for safety. Replace only with part number specified.

The mounting position of replacement is to be identical with originals.

The substitute replacement parts which do not have the same safety characteristics as specified in the parts list may create shock, fire or other hazards.

NOTICE

The part number must be used when ordering parts in order to assist in processing, be sure to include the model number and description.

The parts marked with * are used for SD-5700 only.

ABBREVIATIONS

1. Integrated Circuit (IC)

2. Capacitor (Cap)

- **Capacitance Tolerance (for Nominal Capacitance more than 10pF)**

Table 4-2-1

Symbol	B	C	D	F	G	J	K	M	N
Tolerance %	± 0.1	± 0.25	± 0.5	± 1	± 2	± 5	± 10	± 20	± 30

Symbol	P	Q	T	U	V	W	X	Y	Z
Tolerance %	+ 100 0	+ 30 – 10	+ 50 – 10	+ 75 – 10	+ 20 – 10	+ 100 – 10	+ 40 – 20	+ 150 – 10	+ 80 – 20

Ex. 10MF J = 10µF ± 5%

- **Capacitance Tolerance (for Nominal Capacitance 10pF or less)**

Table 4-2-2

Symbol	B	C	D	F	G
Tolerance pF	± 0.1	± 0.25	± 0.5	± 1	± 2

Ex. 10pF G = 10pF ± 2pF

3. Resistor (Res)

- **Resistance tolerance**

Table 4-3-1

Symbol	B	C	D	F	G	J	K	M
Tolerance %	± 0.1	± 0.25	± 0.5	± 1	± 2	± 5	± 10	± 20

Ex. 470ohmJ = 470ohm± 5%

4. EXPLODED VIEWS

4-1. Packing Assembly

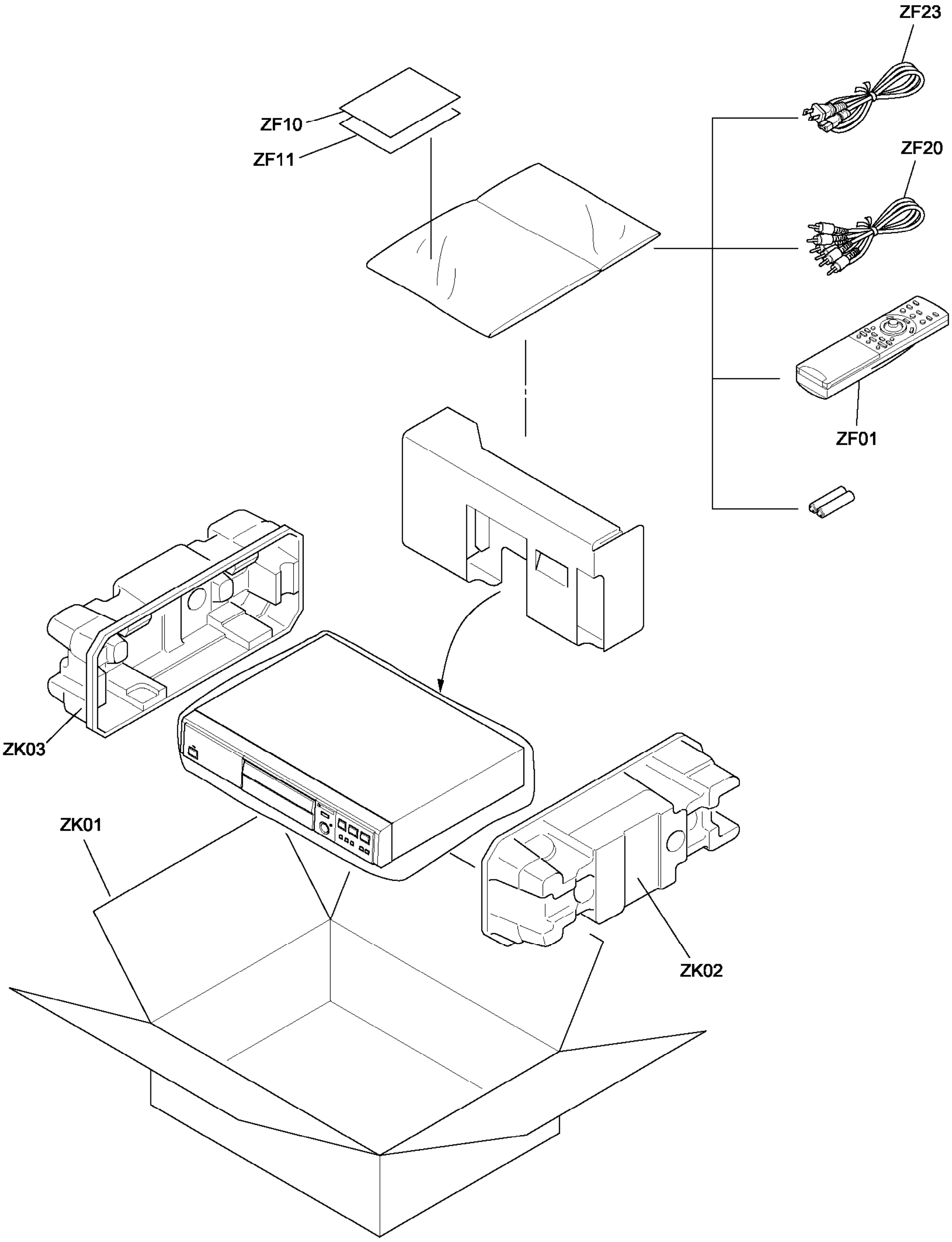

ZF23
ZF10
ZF11
ZF20
ZF01
ZK03
ZK01
ZK02

Fig. 4-4-1

4-2. Chassis Assembly

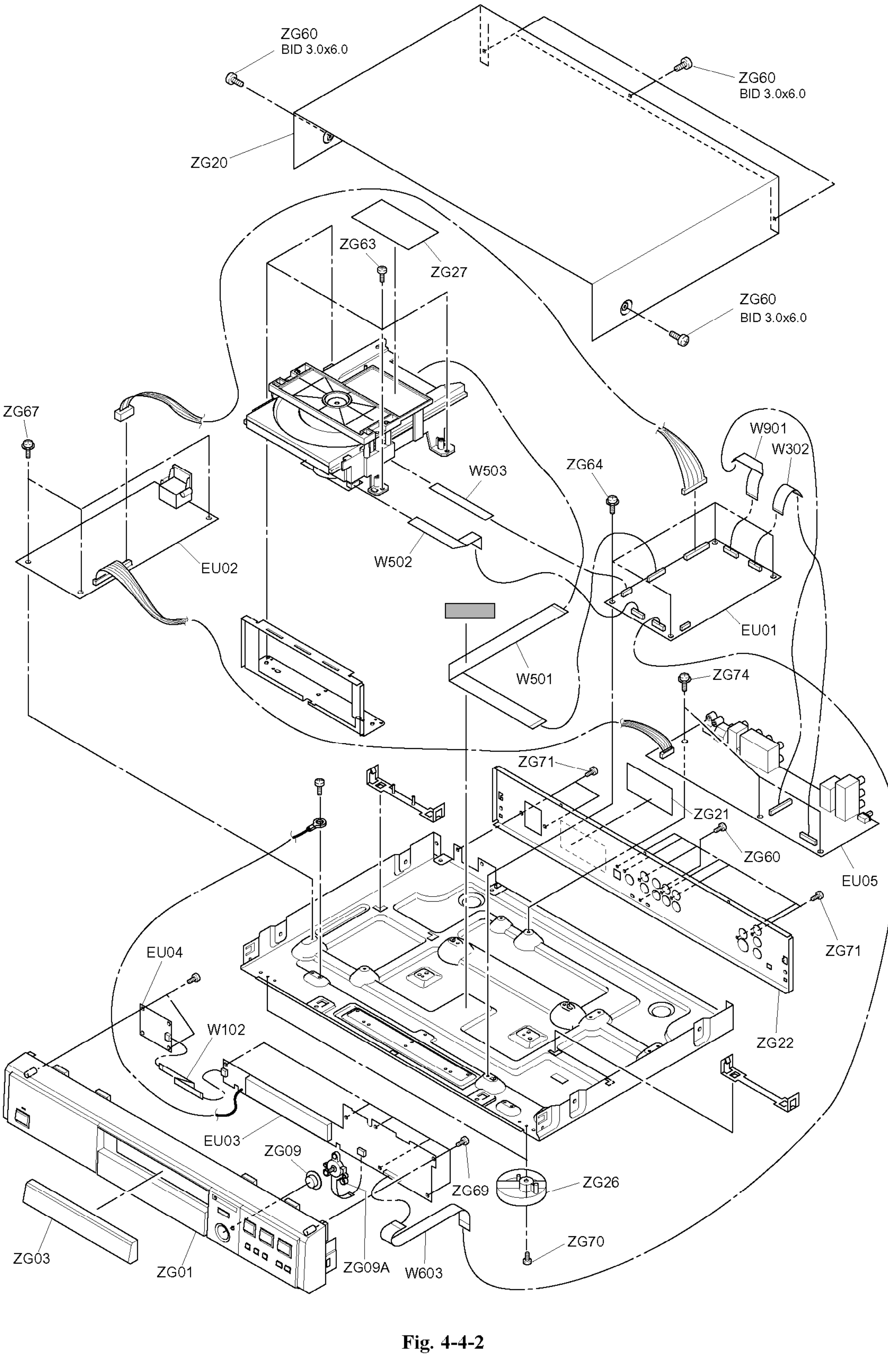

ZG60
BID 3.0x6.0
ZG60
BID 3.0x6.0
ZG20
ZG63
ZG27
ZG60
BID 3.0x6.0
ZG67
W901
W302
W503
ZG64
EU02
W502
EU01
W501
ZG74
ZG71
ZG21
ZG60
EU05
ZG71
EU04
ZG22
W102
EU03
ZG09
ZG26
ZG69
ZG70
ZG03
ZG01
ZG09A
W603

Fig. 4-4-2

4-3. Mechanism Assembly

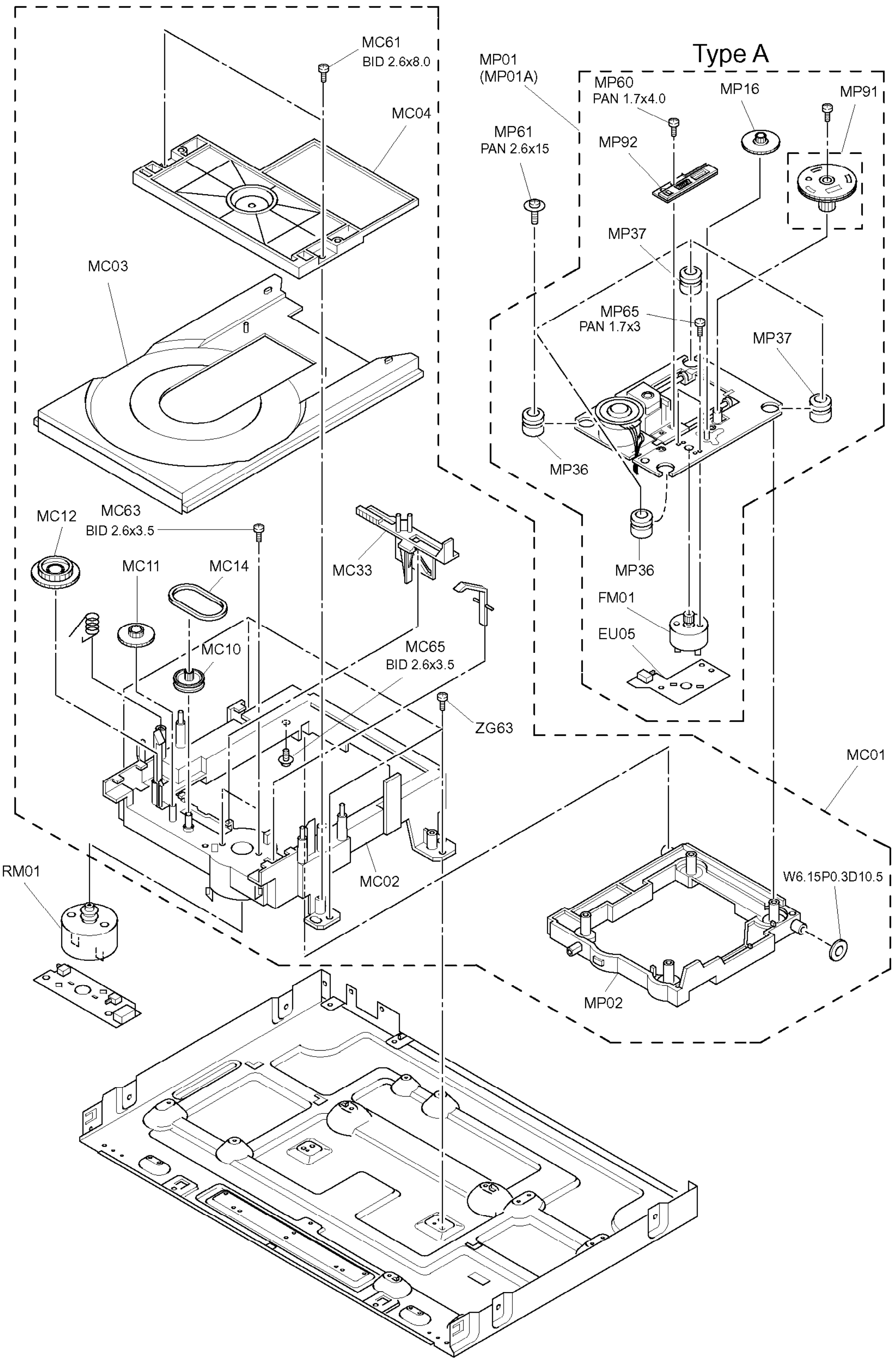

MC61
BID 2.6x8.0
MC04
MP01
(MP01A)
Type A
MP60
PAN 1.7x4.0
MP16
MP91
MP61
PAN 2.6x15
MP92
MC03
MP37
MP65
PAN 1.7x3
MP37
MP36
MC12
MC63
BID 2.6x3.5
MC11
MC14
MC33
MP36
FM01
EU05
MC10
MC65
BID 2.6x3.5
ZG63
MC01
RM01
W6.15P0.3D10.5
MC02
MP02

Fig. 4-4-3

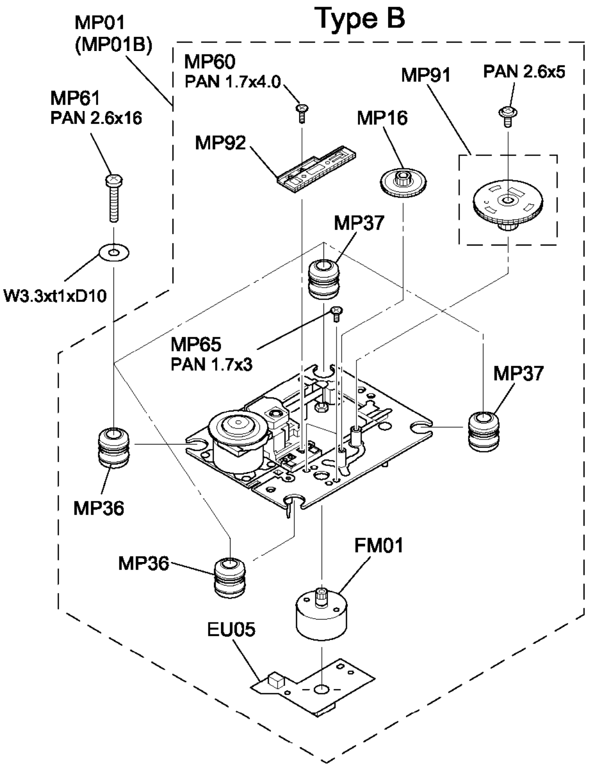
Mechanism Assembly (Type B)

Note:

The pickup mechanism assembly has two types, A and B of which shapes differ.

For the SD-4700/5700, only Type A is a service part. Type B can be changed to Type A pickup free from any performance problem.

Type A also has two types, but either of the part can be used for service.



Type B
MP01
(MP01B)
MP60
PAN 1.7x4.0
MP91
PAN 2.6x5
MP61
PAN 2.6x16
MP16
MP92
MP37
W3.3xt1xD10
MP65
PAN 1.7x3
MP37
MP36
FM01
MP36
EU05

Fig. 4-4-4

5.PARTS LIST

	LOCATION NUMBER	PART NUMBER	DESCRIPTION
			- MECHANICAL PARTS -
	MC01	79070416	Chassis Assy,Mechanism
!	MP01	79070489	Mechanism Assy,Pickup,PVR202T-W
!	MP01	79070470	Mechanism Assy,Pickup
	MP36	79070458	Rubber,Dumper Kit
	MP37	79070458	Rubber,Dumper Kit
	W102	79080145	Cable,Flexible FFC,4P,L120
	W302	79080256	Cable,Flexible FFC,18P,L90
	W501	79080273	Cable,Flexible FFC,23P,L297
	W502	79080192	Cable,Flexible FFC,6P,L110
	W503	79080193	Cable,Flexible FFC,8P,L85
	W603	79080279	Cable,Flexible FFC,18P,L120
	W901	79080236	Cable,Flexible FFC,26P,L120
	ZF01	79078070	Remote Control Unit,SE-R0050,SD-4700
	ZF01	79078071	Remote Control Unit,SE-R0051,SD-5700
!	ZF10	79077149	Owners Manual English/French,SD-5700
!	ZF10	79077151	Owners Manual English/French,SD-4700
!	ZF11	79077148	Owners Manual Spanish,SD-5700
!	ZF11	79077150	Owners Manual Spanish,SD-4700
	ZF20	79070037	Cable,AV
!	ZF23	79088007	Power Cord
	ZG01	79071209	Front Panel(Black),SD-4700
	ZG01	79071213	Front Panel(Silver),SD-5700
	ZG03	79071210	Panel,Tray(Black) SD-4700
	ZG03	79071214	Panel,Tray(Silver) SD-5700
	ZG09	79071212	Kye,Cursor(Silver) SD-5700
	ZG09	79071211	Key,Cursor(Black) SD-4700
	ZG09A	79089157	Switch,Tact RDSY0010
	ZG20	79073035	Cover,Top(Black) SD-4700
	ZG20	79073055	Cover,Top(Black) SD-4700
	ZG20	79073058	Cover,Top(Silver) SD-5700
	ZG26	79073036	Foot Assy,Front(Silver),SD-5700
	ZG26	79073038	Foot Assy,Front(Black),SD-4700
!	ZG27	79070469	Label,Caution
	ZZ03	79080074	Kit,Data Update

	LOCATION NUMBER	PART NUMBER	DESCRIPTION		
			- ELECTRICAL PARTS -		
	EU01	79083104	PC Board Assy	Main,SD-4700	
	EU01	79083105	PC Board Assy	Main,SD-5700	
			- INTEGRATED CIRCUITS -		
	IC301	79040007	IC	TC7S08F	
	IC302	79040007	IC	TC7S08F	
	IC303	79040007	IC	TC7S08F	
	IC304	79040248	IC	S-80145CLMC-J16	
	IC305	79040356	IC	W986432DH	
	IC307	79040357	IC	S-24C02AFJA-TB	
	IC308	79040357	IC	S-24C02AFJA-TB	
	IC309	79040355	IC	MBM29LV160BE90	
	IC310	79040361	IC	MPC2948T	
	IC311	79040247	IC	S-814A33AUC-BCX	
	IC312	79040354	IC	TC74VHCT244AFTE	
	IC313	79040354	IC	TC74VHCT244AFTE	
	IC401	79040282	IC	TC94A03F	
	IC402	79040323	IC	M11B11664A-30T	
	IC501	79040006	IC	TC7S04F	
	IC502	79040296	IC	TA1323F	
	IC503	79040324	IC	BA5813FM-E2	
	IC901	79040227	IC	PLL1700E-T	
	IC902	79040249	IC	TC7SH08FU	
	IC903	79040325	IC	S-814A50AUC-BD0	
	IC904	79040249	IC	TC7SH08FU	
			- TRANSISTORS -		
	Q301	79050018	Transistor,Chip	2SA1162	
	Q302	79050018	Transistor,Chip	2SA1162	
	Q303	79050018	Transistor,Chip	2SA1162	
	Q304	79050018	Transistor,Chip	2SA1162	
	Q305	79050018	Transistor,Chip	2SA1162	
	Q306	79050018	Transistor,Chip	2SA1162	
	Q307	79050043	Transistor,Chip	RN1402	
	Q308	79050001	Transistor,Chip	RN2402	
	Q309	79050043	Transistor,Chip	RN1402	
	Q401	79050085	Transistor,Chip	2SC3326-B	
	Q501	79050015	Transistor,Chip	HN1B01F	
	Q502	79050015	Transistor,Chip	HN1B01F	
	Q503	79050079	Transistor,Chip	2SA1213-Y	
	Q504	79050043	Transistor,Chip	RN1402	
	Q505	79050014	Transistor,Chip	HN1C03F	
			- DIODES -		
	D501	79060022	Diode,Chip	1SS368	
	D502	79060022	Diode,Chip	1SS368	
			- MISCELLANEOUS -		
	X401	79089155	Oscillator,Ceramic	22.58MHz	
	X901	79089003	Oscillator	SMD49,27MHz	
!	EU02	79085082	PC Board Assy	Power	
			- TRANSISTORS -		
	Q801	79050095	Transistor	FS5KM-16A	
!	Q802	79040327	IC	TA1319AP	
!	Q803	79050041	Photo Coupler	TLP621(GR)	
!	Q804	79050041	Photo Coupler	TLP621(GR)	
	Q821	79040146	IC	TA76431S	
	Q822	79050076	Transistor	2SA1585STP-Q	
	Q823	79050076	Transistor	2SA1585STP-Q	
	Q824	79050077	Transistor	2SC1740STP-Q	
	Q825	79050040	Transistor	2SA1048-Y	
	Q826	79050097	Transistor	2SC3243	
	Q827	79040288	IC	PQ05RD11	
	Q828	79040289	IC	PQ3RD13	
	Q829	79040289	IC	PQ3RD13	
	Q830	79050008	Transistor	RN1201	
			- DIODES -		
!	D801	79060016	Diode	ERA15-06	
!	D802	79060016	Diode	ERA15-06	
!	D803	79060016	Diode	ERA15-06	
!	D804	79060016	Diode	ERA15-06	
	D805	79060009	Diode	RU-1P	
	D806	79060013	Diode	AG01	
	D807	79060080	Diode	AK06	
	D808	79060029	Diode,Zener	6.8V	
	D821	79060010	Diode	RK46	
	D822	79060010	Diode	RK46	
	D823	79060010	Diode	RK46	
	D825	79060008	Diode	RU2YX	
	D826	79060013	Diode	AG01	
	D827	79060013	Diode	AG01	
	D829	79060012	Diode	ERA15-02	
	D830	79060080	Diode	AK06	
	D831	79060080	Diode	AK06	
	D832	79060027	Diode,Zener	UZ12BSB	
	D833	79060027	Diode,Zener	UZ12BSB	
	D834	79060005	Diode,Zener	UZ11BSB	
	D835	79060007	Diode,Zener	UZ3.0BSB	
	D836	79060012	Diode	ERA15-02	
	D838	79060029	Diode,Zener	6.8V	
	D839	79060029	Diode,Zener	6.8V	
	D840	79060029	Diode,Zener	6.8V	
	D841	79060012	Diode	ERA15-02	
			- CAPACITORS -		
!	C801	79020198	Cap,Film	10000pF	M 275V
!	C802	79020198	Cap,Film	10000pF	M 275V
!	C803	79020190	Cap,Ceramic	100pF	M 250V
!	C804	79020190	Cap,Ceramic	100pF	M 250V
!	C811	79020190	Cap,Ceramic	100pF	M 250V
			- RESISTORS -		
			- MISCELLANEOUS -		
!	F801	79087008	Fuse	1.6A,125V	
!	F821	79087013	Fuse	3.00A,125V	
!	F822	79087009	Fuse	3.50A,125V	
!	F823	79087009	Fuse	3.50A,125V	
!	P802	79089023	Jack	AC Inlet	
!	RF821	79030015	Res,Fusible	2.2ohm	J 1/4W
!	RF822	79030125	Res,Fusible	3.9ohm	J 1/4W
!	T801	79010025	Line Filter	183Y0R5	
!	T802	79010026	Power Transformer	SRW3020ED5-210	
	EU03	79081097	PC Board Assy	Front	
			- INTEGRATED CIRCUITS -		
	IC101	79040358	IC	TMP87CH75F-3D68	
			- TRANSISTORS -		
	Q111	79050001	Transistor,Chip	RN2402	
			- DIODES -		
	D103	79060022	Diode,Chip	1SS368	
	D111	79060091	Diode,LED	LED, MVL 354B T	
			- MISCELLANEOUS -		
	A101	79089107	Display,FL	20U47100SAN	
	BZ101	79089156	Buzzer	PKM13EPY	
	MT101	79089146	Module,RMT	GP1U261XK	
	S101	79089020	Switch	Push	
	S102	79089020	Switch	Push	
	S103	79089020	Switch	Push	
	S105	79089020	Switch	Push	
	S106	79089020	Switch	Push	
	S107	79089020	Switch	Push	
	S108	79089020	Switch	Push	
	S109	79089020	Switch	Push	
	S110	79089020	Switch	Push	
	S111	79089020	Switch	Push	
	X101	79089095	Oscillator,Ceramic	8MHz	
	EU04	79081098	PC Board Assy	Power Switch	
			- TRANSISTORS -		
	Q107	79050001	Transistor,Chip	RN2402	
			- DIODES -		
	D106	79060092	Diode,LED	EL31051VRT	
			- MISCELLANEOUS -		
	S113	79089020	Switch	Push	
	EU05	79085086	PC Board Assy	Output,SD-4700	
	EU05	79085087	PC Board Assy	Output,SD-5700	
			- INTEGRATED CIRCUITS -		
	ICX01	79040360	IC	BH7863FS-E2	
	ICY01	79040359	IC	AD1833AST	
	ICY02	79040325	IC	S-814A50AUC-BD0	
	ICY03	79040044	IC	NJM4580E	
*	ICY04	79040044	IC	NJM4580E	
	ICY07	79089159	IC	TOTX179	
	ICY09	79040074	IC	TC74HCU04AF	
	ICY11	79040044	IC	NJM4580E	
	ICY12	79040044	IC	NJM4580E	
	ICY13	79040325	IC	S-814A50AUC-BD0	
			- TRANSISTORS -		
	QX02	79050078	Transistor,Chip	DTC114EKA-T	
	QX04	79050078	Transistor,Chip	DTC114EKA-T	
	QX16	79050031	Transistor,Chip	DTA114EKA	
	QY01	79050001	Transistor,Chip	RN2402	
	QY02	79050001	Transistor,Chip	RN2402	
	QY03	79050001	Transistor,Chip	RN2402	

LOCATION NUMBER	PART NUMBER	DESCRIPTION	
QY04	79050001	Transistor,Chip	RN2402
QY05	79050012	Transistor,Chip	RN4601
QY06	79050001	Transistor,Chip	RN2402
QY07	79050001	Transistor,Chip	RN2402
QY08	79050043	Transistor,Chip	RN1402
QY09	79050001	Transistor,Chip	RN2402
QY10	79050014	Transistor,Chip	HN1C03F
QY11	79050014	Transistor,Chip	HN1C03F
QY12	79050012	Transistor,Chip	RN4601
QY13	79050012	Transistor,Chip	RN4601
QY14	79050043	Transistor,Chip	RN1402
QY15	79050043	Transistor,Chip	RN1402
QY16	79050001	Transistor,Chip	RN2402
* QY17	79050012	Transistor,Chip	RN4601
QY18	79050001	Transistor,Chip	RN2402
QY19	79050014	Transistor,Chip	HN1C03F
QY20	79050014	Transistor,Chip	HN1C03F
QY21	79050014	Transistor,Chip	HN1C03F
* QY25	79050085	Transistor,Chip	2SC3326-B
QY27	79050014	Transistor,Chip	HN1C03F
* QY29	79050085	Transistor,Chip	2SC3326-B
		- DIODES -	
DX01	79060028	Diode,Chip	1SS226
DX03	79060028	Diode,Chip	1SS226
* DX06	79060028	Diode,Chip	1SS226
* DX07	79060028	Diode,Chip	1SS226
* DX08	79060028	Diode,Chip	1SS226
* DX09	79060028	Diode,Chip	1SS226
* DX10	79060028	Diode,Chip	1SS226
* DX11	79060028	Diode,Chip	1SS226
DY01	79060022	Diode,Chip	1SS368
DY02	79060022	Diode,Chip	1SS368
DY03	79060022	Diode,Chip	1SS368
DY04	79060022	Diode,Chip	1SS368
DY05	79060022	Diode,Chip	1SS368
		- MISCELLANEOUS -	
JX01	79089130	Jack,Video	YKC22-0509
JX02	79089114	Plate,Jack	Video
JY01	79089098	Plate,Jack	2CH
JY02	79089099	Plate,Jack	5.1CH
JY03	79089100	Plate,Jack	Digital Audio
SX01	79089158	Switch,Slide	SSAA110200

LOCATION NUMBER	PART NUMBER	DESCRIPTION

TOSHIBA CORPORATION
1–1, SHIBAURA 1–CHOME, MINATO–KU, TOKYO 105–8001, JAPAN

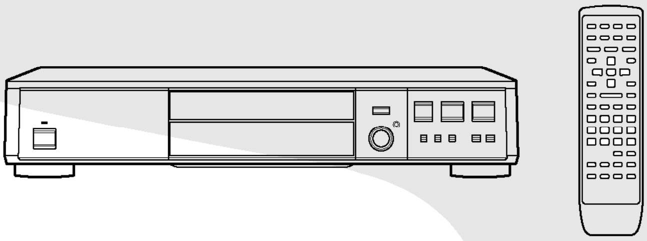
TOSHIBA

FILE NO. 810-200108

SERVICE MANUAL

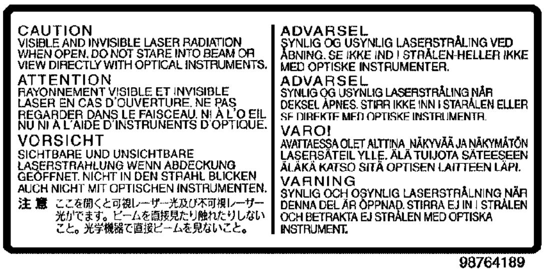
DVD VIDEO PLAYER

SD-3750
SD-K700



Jan., 2002 Ⓢ

LASER BEAM CAUTION LABEL



CAUTION
VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. DO NOT STARE INTO BEAM OR VIEW DIRECTLY WITH OPTICAL INSTRUMENTS.

ATTENTION
RAYONNEMENT VISIBLE ET INVISIBLE LASER EN CAS D'OUVERTURE. NE PAS REGARDER DANS LE FAISCEAU. NI À L'O EIL NU NI À L'AIDE D'INSTRUNENTS D'OPTIQUE.

VORSICHT
SICHTBARE UND UNSICHTBARE LASERSTRAHLUNG WENN ABDECKUNG GEÖFFNET. NICHT IN DEN STRAHL BLICKEN AUCH NICHT MIT OPTISCHEN INSTRUMENTEN.

注 意　ここを開くと可視レーザー光及び不可視レーザー光がでます。ビームを直接見たり触れたりしないこと。光学機器で直接ビームを見ないこと。

ADVARSEL
SYNLIG OG USYNLIG LASERSTRÅLING VED ÅBNING. SE IKKE IND I STRÅLEN-HELLER IKKE MED OPTISKE INSTRUMENTER.

ADVARSEL
SYNLIG OG USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES. STIRR IKKE INN I STARÅLEN ELLER SE DIREKTE MED OPTISKE INSTRUMENTR.

VARO!
AVATTAESSA OLET ALTTINA NÄKYVÄÄ JA NÄKYMÄTÖN LASERSÄTEIL YLLE. ÄLÄ TUIJOTA SÄTEESEEN ÄLÄKÄ KATSO SITÄ OPTISEN LAITTEEN LÄPI.

VARNING
SYNLIG OCH OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD. STIRRA EJ IN I STRÅLEN OCH BETRAKTA EJ STRÅLEN MED OPTISKA INSTRUMENT.

98764189

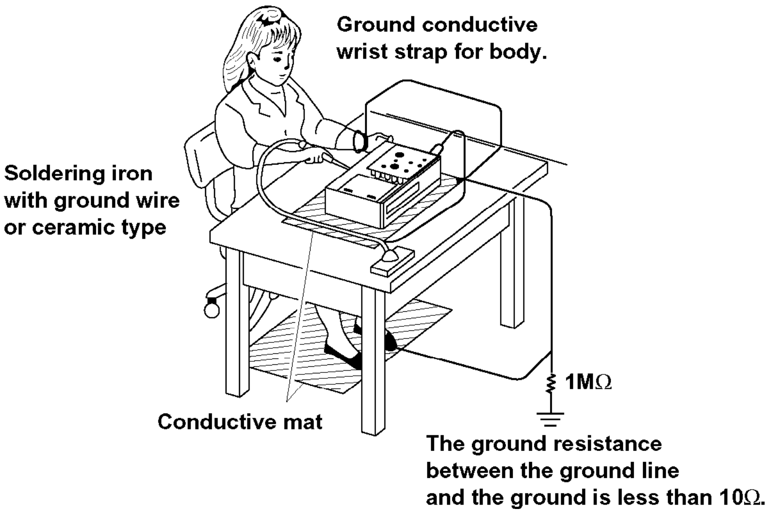
When the power supply is being turned on, you may not remove this laser cautions label. If it removes, radiation of a laser may be recceived.

PREPARATION OF SERVICING

Pickup Head consists of a laser diode that is very susceptible to external static electricity.

Although it operates properly after replacement, if it was subject to electrostatic discharge during replacement, its life might be shortened. When replacing, use a conductive mat, soldering iron with ground wire, etc. to protect the laser diode from damage by static electricity.

And also, the LSI and IC are same as above.


Ground conductive wrist strap for body.
Soldering iron with ground wire or ceramic type
1MΩ
Conductive mat
The ground resistance between the ground line and the ground is less than 10Ω.

SAFETY NOTICE

SAFETY PRECAUTIONS

LEAKAGE CURRENT CHECK

Plug the AC line cord directly into a 120V AC outlet (do not use an isolation transformer for this check). Use an AC voltmeter, having 5000 Ω per volt or more sensitivity.

Connect a 1500 Ω 10 W resistor, paralleled by a 0.15 µF 150V AC capacitor between a known good earth ground (water pipe, conduit, etc.) and all exposed metal parts of cabinet (antennas, handle bracket, metal cabinet screwheads, metal overlays, control shafts, etc.).

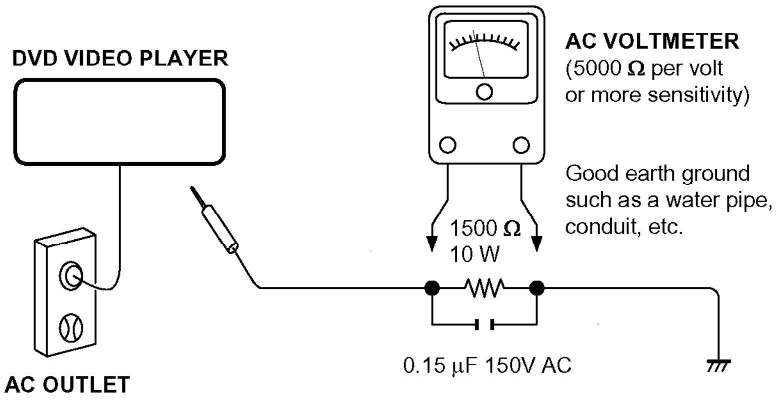
Measure the AC voltage across the 1500 Ω resistor.

The test must be conducted with the AC switch on and then repeated with the AC switch off. The AC voltage indicated by the meter may not exceed 0.3 V. A reading exceeding 0.3 V indicates that a dangerous potential exists, the fault must be located and corrected.

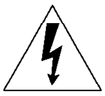
Repeat the above test with the DVD VIDEO PLAYER power plug reversed.

NEVER RETURN A DVD VIDEO PLAYER TO THE CUSTOMER WITHOUT TAKING NECESSARY CORRECTIVE ACTION.

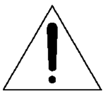
READING SHOULD NOT EXCEED 0.3V



Test all exposed metal.
Voltmeter Hook-up for Leakage Current Check



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

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ABBREVIATIONS
   1. Integrated Circuit (IC)
   2. Capacitor (Cap)
   3. Resistor (Res)
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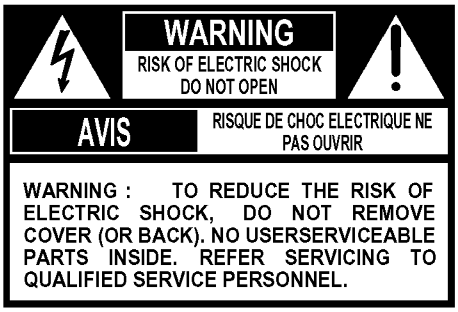
SECTION 1
GENERAL DESCRIPTIONS

1. OPERATING INSTRUCTIONS

SAFETY PRECAUTIONS



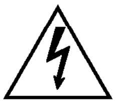
WARNING

RISK OF ELECTRIC SHOCK
DO NOT OPEN

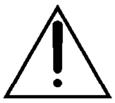
AVIS

RISQUE DE CHOC ELECTRIQUE NE
PAS OUVRIR

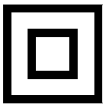
WARNING : TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USERSERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.



The symbol for CLASS II (Double Insulation)

WARNING: **TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE. DANGEROUS HIGH VOLTAGES ARE PRESENT INSIDE THE ENCLOSURE. DO NOT OPEN THE CABINET. REFER SERVICING TO QUALIFIED PERSONNEL ONLY.**

CAUTION: **TO PREVENT ELECTRIC SHOCK, MATCH WIDE BLADE OF PLUG TO WIDE SLOT, FULLY INSERT.**

ATTENTION: **POUR EVITER LES CHOCS ELECTRIQUES, INTRODUIRE LA LAME LA PLUS LARGE DE LA FICHE DANS LA BORNE CORRESPONDANTE DE LA PRISE ET POUSSER JUSQU’AU FOND.**

CAUTION: This Digital Video Disc Player employs a Laser System.
To ensure proper use of this product, please read this owner’s manual carefully and retain for future reference. Should the unit require maintenance, contact an authorized service location - see service procedure.

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

To prevent direct exposure to laser beam, do not try to open the enclosure.
Visible and invisible laser radiation when open and interlocks defeated.
DO NOT STARE INTO BEAM.

FCC NOTICE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rule. These limits are designed to provide reasonable protection against harmful interference in a residential installation.
This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.
However, there is no guarantee that interference will not occur in a particular installation.
If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

WARNING: Changes or modifications made to this equipment, not expressly approved by Toshiba, or parties authorized by Toshiba, could void the user’s authority to operate the equipment.

The instructions shall state that an ALL-POLE MAINS SWITCH with a contact separation of at least 3 mm in each pole shall be incorporated in the electrical installation of the building.

CAUTION: These servicing instructions are for use by qualified service personnel only. To reduce the risk of electric shock do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.

In the spaces provided below, record the Model and Serial No. located on the rear panel of your DVD player.

Model No. ______________________________

Serial No. ______________________________

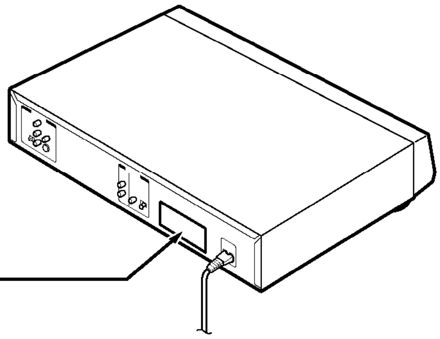
Retain this information for future reference.

Location of the required label

PRODUCT IS CERTIFIED BY THE MANUFACTURER TO
COMPLY WITH DHHS RULE 21 CFR SUBCHAPTER J
APPLICABLE AT THE DATE OF MANUFACTURE.

MANUFACTURED

TOSHIBA CORPORATION
1-1,SHIBAURA 1-CHOME,MINATO-KU.
TOKYO 105-8001,JAPAN

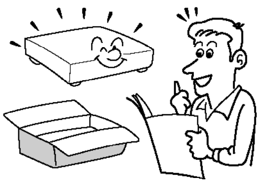


IMPORTANT SAFETY INSTRUCTIONS

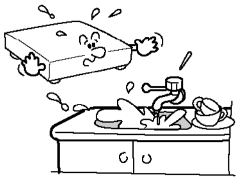
CAUTION: PLEASE READ AND OBSERVE ALL WARNINGS AND INSTRUCTIONS GIVEN IN THIS OWNER'S MANUAL AND THOSE MARKED ON THE UNIT. RETAIN THIS BOOKLET FOR FUTURE REFERENCE.

This set has been designed and manufactured to assure personal safety. Improper use can result in electric shock or fire hazard. The safeguards incorporated in this unit will protect you if you observe the following procedures for installation, use and servicing. This unit is fully transistorized and does not contain any parts that can be repaired by the user.
DO NOT REMOVE THE CABINET COVER, OR YOU MAY BE EXPOSED TO DANGEROUS VOLTAGE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL ONLY.

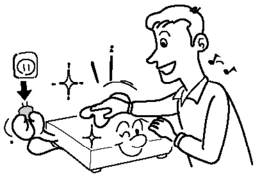
1. Read these instructions.



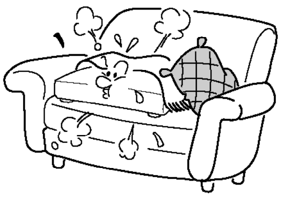
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.



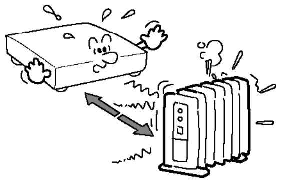
6. Clean only with dry cloth.



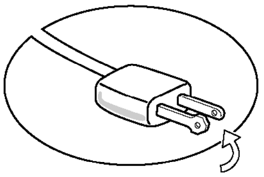
7. Do not block any ventilation openings. Install in accordance with the manufacturer’s instructions.



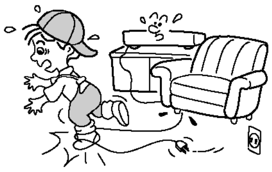
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.



9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

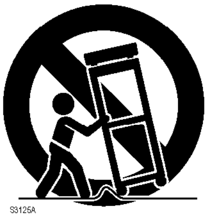


10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.



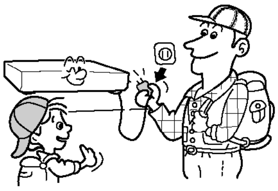
11. Only use attachments/accessories specified by the manufacturer.

12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

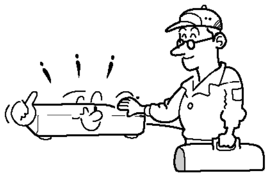


IMPORTANT SAFETY INSTRUCTIONS

13. Unplug this apparatus during lightning storms or when unused for long periods of time.

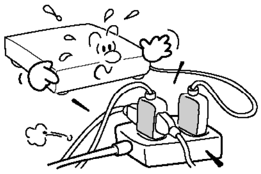


14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

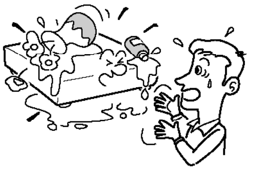


15. When you use headphones, keep the volume at a moderate level. If you use the headphones continuously with high volume sound, it may cause hearing damage.

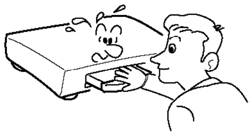
16. Do not overload wall outlets; extension cords, or integral convenience receptacles as this can result in a risk of fire or electric shock.



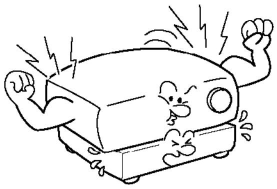
17. Never insert objects of any kind into this apparatus through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind on the apparatus.



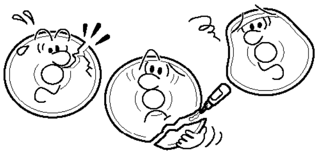
18. Keep your fingers well clear of the disc tray as it is closing. Neglecting to do so may cause serious personal injury.



19. Do not place a heavy object on or step on the apparatus. The object may fall, causing serious personal injury and serious damage to the apparatus.



20. Do not use a cracked, deformed, or repaired disc. These discs are easily broken and may cause serious personal injury and apparatus malfunction.



Precautions

Notes on handling

- When shipping the DVD player, the original shipping carton and packing materials come in handy. For maximum protection, repack the unit as it was originally packed at the factory.
- Do not use volatile liquids, such as insect spray, near the DVD player. Do not leave rubber or plastic products in contact with the DVD player for a long time. They will leave marks on the finish.
- The top and rear panels of the DVD player may become warm after a long period of use. This is not a malfunction.
- When the DVD player is not in use, be sure to remove the disc and turn off the power.
- If you do not use the DVD player for a long period, the unit may not function properly in the future. Turn on and use the DVD player occasionally.

Notes on locating

- Place the DVD player on a level surface. Do not use it on a shaky or unstable surface such as a wobbling table or inclined stand. The loaded disc may come off the proper position and cause damage to the DVD player.
- When you place this DVD player near a TV, radio, or VCR, the playback picture may become poor and the sound may be distorted. In this case, place the DVD player away from the TV, radio, or VCR.

Notes on cleaning

Use a soft, dry cloth for cleaning.

- For stubborn dirt, soak the cloth in a weak detergent solution, wring well and wipe. Use a dry cloth to wipe it dry.
  Do not use any type of solvent, such as thinner and benzine, as they may damage the surface of the DVD player.
- If you use a chemical saturated cloth to clean the unit, follow that product's instructions.

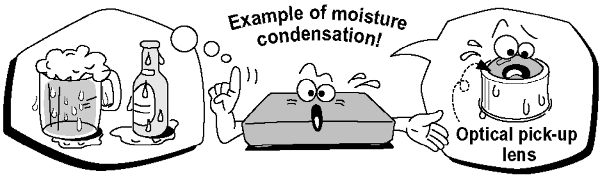
To obtain a clear picture

The DVD player is a high technology, precision device. If the optical pick-up lens and disc drive parts are dirty or worn down, the picture quality becomes poor. To obtain a clear picture, we recommend regular inspection and maintenance (cleaning or parts replacement) every 1,000 hours of use depending on the operating environment. For details, contact your nearest dealer.

Notes on moisture condensation

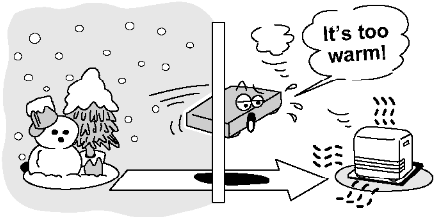
Moisture condensation damages the DVD player. Please read the following carefully.

Moisture condensation occurs, for example, when you pour a cold drink into a glass on a warm day. Drops of water form on the outside of the glass. In the same way, moisture may condense on the optical pick-up lens inside this unit, one of the most crucial internal parts of the DVD player.



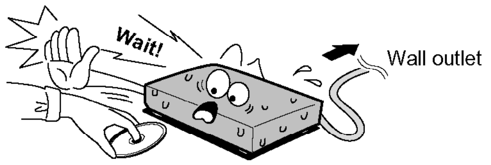
- **Moisture condensation occurs during the following cases.**

- When you bring the DVD player directly from a cold place to a warm place.
- When you use the DVD player in a room where you just turned on the heater, or a place where the cold wind from the air conditioner directly hits the unit.
- In summer, when you use the DVD player in a hot and humid place just after you move the unit from an air conditioned room.
- When you use the DVD player in a humid place.


It's too warm!

- **Do not use the DVD player when moisture condensation may occur.**

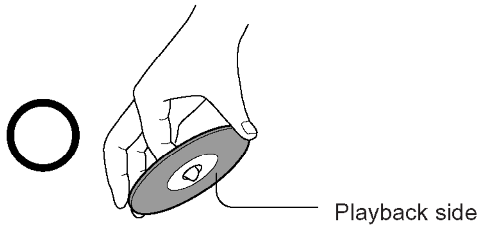
  If you use the DVD player in such a situation, it may damage discs and internal parts. Remove the disc, connect the power cord of the DVD player to the wall outlet, turn on the DVD player, and leave it for two or three hours. After two or three hours, the DVD player will have warmed up and evaporated any moisture. Keep the DVD player connected to the wall outlet and moisture condensation will seldom occur.



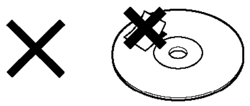
Notes on Discs

On handling discs

- Do not touch the playback side of the disc.

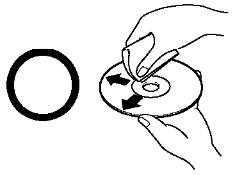


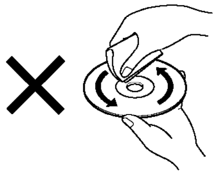
- Do not attach paper or tape to discs.



On cleaning discs

- Fingerprints and dust on the disc cause picture and sound deterioration. Wipe the disc from the center outwards with a soft cloth. Always keep the disc clean.





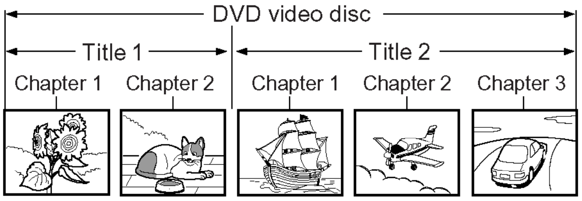
- If you cannot wipe off the dust with a soft cloth, wipe the disc lightly with a slightly moistened soft cloth and finish with a dry cloth.
- Do not use any type of solvent such as thinner, benzine, commercially available cleaners or antistatic spray for vinyl LPs. It may damage the disc.

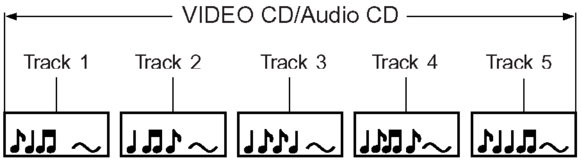
On storing discs

- Do not store discs in a place subject to direct sunlight or near heat sources.
- Do not store discs in places subject to moisture and dust such as a bathroom or near a humidifier.
- Store discs vertically in a case. Stacking or placing objects on discs outside of their case may cause warping.

Structure of disc contents

Normally, DVD video discs are divided into titles, and the titles are sub-divided into chapters. VIDEO CDs/ audio CDs are divided into tracks.





Each title, chapter or track is assigned a number, which is called “title number”, “chapter number” or “track number” respectively.
There may be discs that do not have these numbers.

Notes on copyright

It is forbidden by law to copy, broadcast, show, broadcast on cable, play in public, and rent copyrighted material without permission.

DVD video discs are copy protected, and any recordings made from these discs will be distorted.

This product incorporates copyright protection technology that is protected by method claims of certain U.S. patents and other intellectual property rights owned by Macrovision Corporation and other rights owners. Use of this copyright protection technology must be authorized by Macrovision Corporation, and is intended for home and other limited viewing uses only unless otherwise authorized by Macrovision Corporation. Reverse engineering or disassembly is prohibited.

Notes on Discs (continued)

About this owner's manual

This owner's manual explains the basic instructions of this DVD player. Some DVD video discs are produced in a manner that allows specific or limited operation during playback. As such, the DVD player may not respond to all operating commands. This is not a defect in the DVD player. Refer to instruction notes of discs.

"⊘" may appear on the TV screen during operation. A "⊘" means that the operation is not permitted by the DVD player or the disc.

Notes on region numbers

The region number of this DVD player is 1. If region numbers, which stand for their playable area, are printed on your DVD video disc and you do not find 1 or ALL , disc playback will not be allowed by the player. (In this case, the DVD player will display a message on-screen.)

On VIDEO CDs

This DVD player supports VIDEO CDs equipped with the PBC (Version 2.0) function. (PBC is the abbreviation of Playback Control.) You can enjoy two playback variations depending on types of discs.

- **VIDEO CD not equipped with PBC function (Version 1.1)**
  Sound and movie can be played on this DVD player in the same way as an audio CD.
- **VIDEO CD equipped with PBC function (Version 2.0)**
  In addition to operation of a VIDEO CD not equipped with the PBC function, you can enjoy playback of interactive software with search function by using the menu displayed on the TV screen (Menu Playback).
  Some of the functions described in this owner's manual may not work with some discs.

Playable discs

This DVD player can play the following discs.

	Disc Mark	Contents	Disc Size
DVD video discs	DVD VIDEO™ DVD VIDEO™	video (moving pictures) + Audio	12 cm
			8 cm
VIDEO CDs	COMPACT disc DIGITAL VIDEO	video (moving pictures) + Audio	12 cm
			8 cm
Audio CDs	COMPACT disc DIGITAL AUDIO	Audio	12 cm
			8 cm (CD single)

The following discs are also available.
● DVD-R discs of DVD video format
● CD-R/CD-RW discs of CD-DA format
Some of these discs may be incompatible.

- You cannot play discs other than those listed above.
- You cannot play discs of DVD-RAM or non-standardized discs, etc., even if they may be labeled as above.
- This DVD player uses the NTSC color system, and cannot play DVD video discs recorded in any other color system (PAL, SECAM, etc.).

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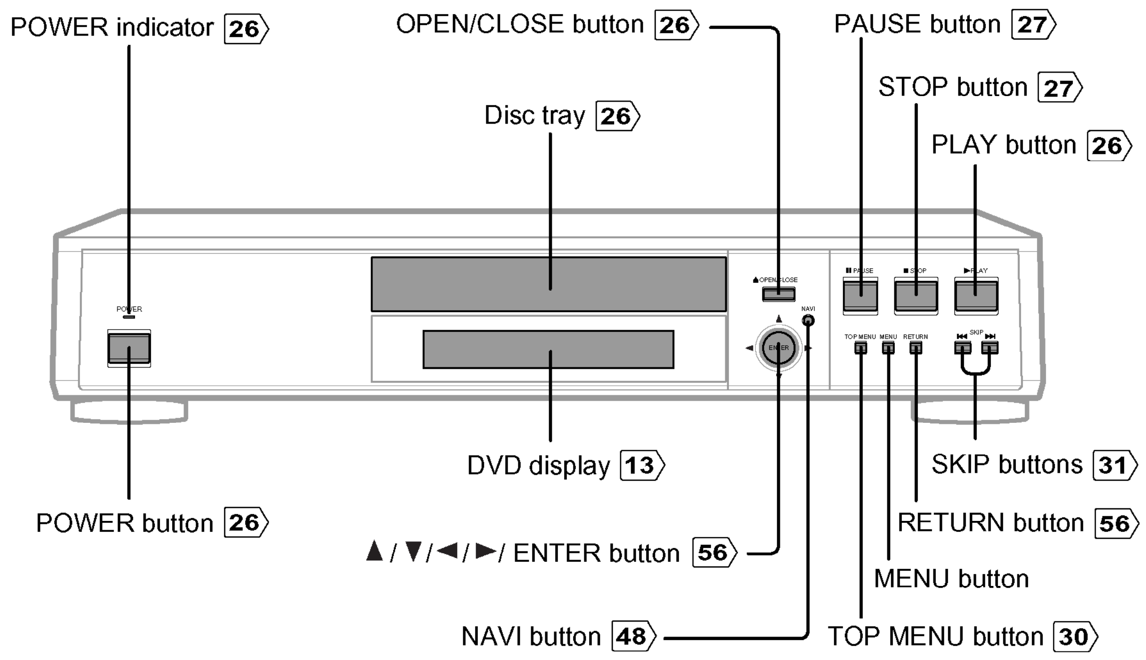
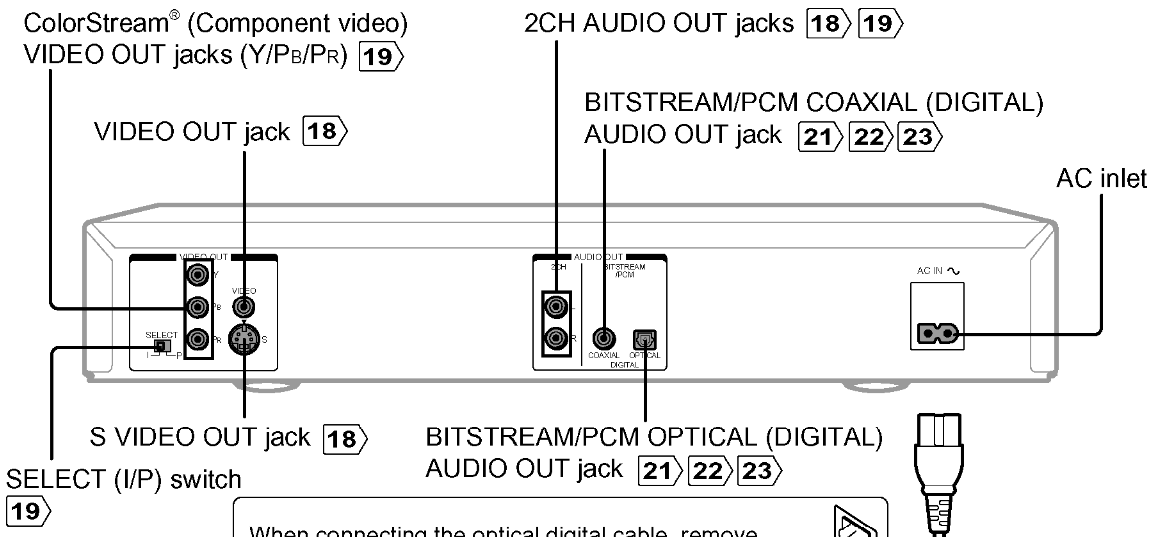
Identification of Controls

See the page in ▷ for details.

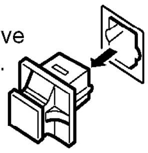
Front panel


POWER indicator 26
OPEN/CLOSE button 26
PAUSE button 27
STOP button 27
Disc tray 26
PLAY button 26
POWER
OPEN/CLOSE
NAVI
ENTER
PAUSE
STOP
PLAY
TOP MENU
MENU
RETURN
SKIP
DVD display 13
SKIP buttons 31
POWER button 26
RETURN button 56
▲/▼/◄/►/ ENTER button 56
MENU button
NAVI button 48
TOP MENU button 30

Rear panel

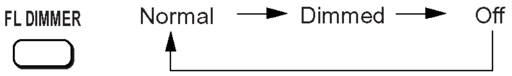

ColorStream® (Component video)
VIDEO OUT jacks (Y/PB/PR) 19
2CH AUDIO OUT jacks 18 19
BITSTREAM/PCM COAXIAL (DIGITAL)
AUDIO OUT jack 21 22 23
VIDEO OUT jack 18
AC inlet
VIDEO OUT
VIDEO
SELECT
AUDIO OUT
2CH
BITSTREAM /PCM
COAXIAL
OPTICAL
DIGITAL
AC IN ∿
S VIDEO OUT jack 18
BITSTREAM/PCM OPTICAL (DIGITAL)
AUDIO OUT jack 21 22 23
SELECT (I/P) switch 19
Power cord

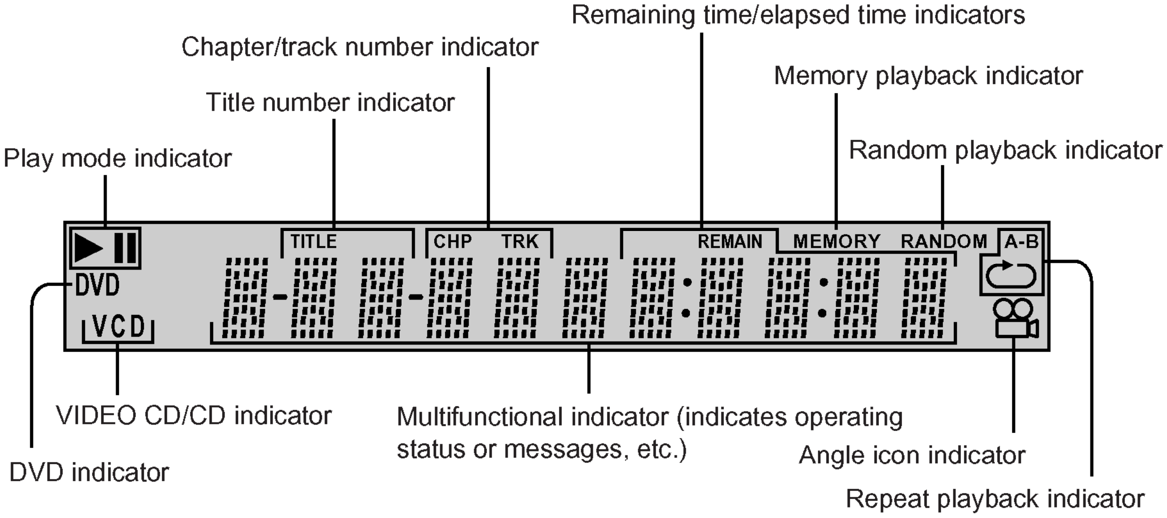
When connecting the optical digital cable, remove the cap and fit the connector into the jack firmly. When not using the jack, keep the cap inserted to protect it from dust intrusion.



DVD display

- **Repeated pressing of the FL DIMMER button on the remote control changes the brightness of the display.**


FL DIMMER
Normal
Dimmed
Off

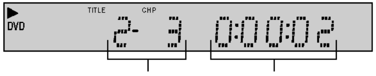

Remaining time/elapsed time indicators
Chapter/track number indicator
Memory playback indicator
Title number indicator
Random playback indicator
Play mode indicator
TITLE
CHP
TRK
REMAIN
MEMORY
RANDOM
A-B
DVD
VCD
VIDEO CD/CD indicator
Multifunctional indicator (indicates operating status or messages, etc.)
Angle icon indicator
DVD indicator
Repeat playback indicator

The indicators vary depending on the kinds of discs you play.

DVD video disc

- During playback:

Example


TITLE
CHP
DVD
2- 3 0:00:02

Playing chapter 3 of title 2

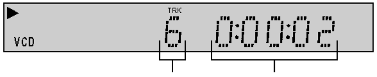
Elapsed time of the current title

- Some discs may not display chapter numbers.
- A time indication not accompanied with a chapter number shows elapsed time of a segment within the current title.

VIDEO CD

- During playback:

Example


TRK
VCD
6 0:00:02

Playing track 6

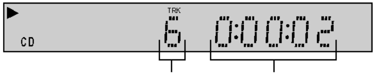
Elapsed time of the current track

Some discs may not display track numbers or elapsed time.

Audio CD

- During playback:

Example


TRK
CD
6 0:00:02

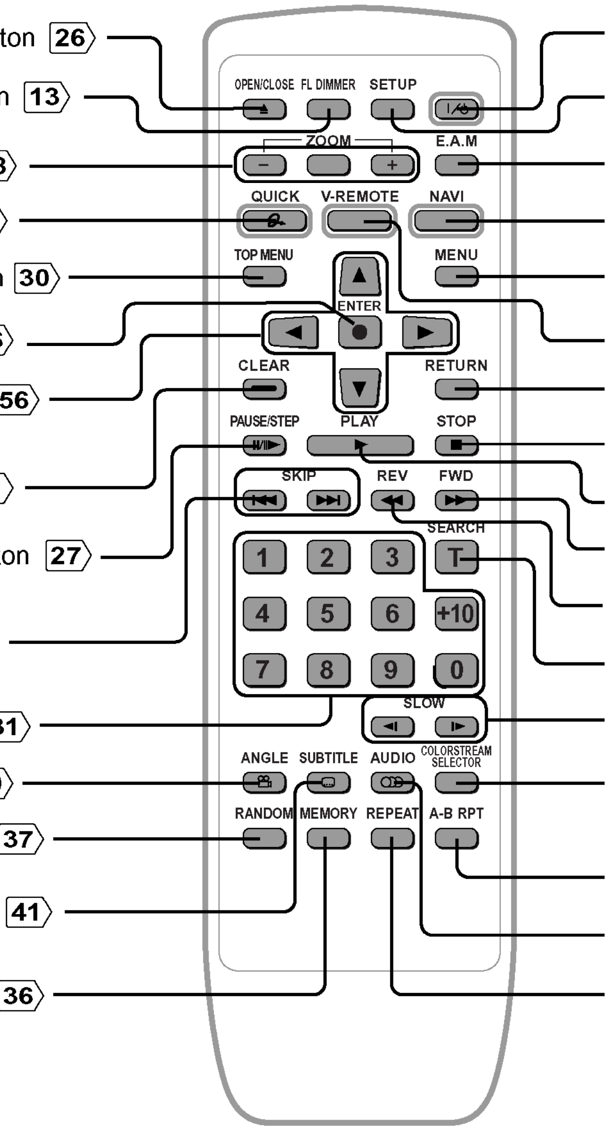
Playing track 6

Elapsed time of the current track

Identification of Controls (continued)

The instructions in this manual describe the functions on the remote control. See the page in ☐ for details.

Remote control


OPEN/CLOSE
FL DIMMER
SETUP
ZOOM
E.A.M
QUICK
V-REMOTE
NAVI
TOP MENU
MENU
ENTER
CLEAR
RETURN
PAUSE/STEP
PLAY
STOP
SKIP
REV
FWD
SEARCH
1
2
3
T
4
5
6
+10
7
8
9
0
SLOW
ANGLE
SUBTITLE
AUDIO
COLORSTREAM SELECTOR
RANDOM
MEMORY
REPEAT
A-B RPT

OPEN/CLOSE button 26

FL DIMMER button 13

ZOOM buttons 38

QUICK button 47

TOP MENU button 30

ENTER button 56

Direction buttons 56 (▲/▼/◄/►)

CLEAR button 31

PAUSE/STEP button 27

SKIP buttons 31

Number buttons 31

ANGLE button 40

RANDOM button 37

SUBTITLE button 41

MEMORY button 36

Power button 26

SETUP button 56

E.A.M button 39

NAVI button 48

MENU button*

V-REMOTE button 46

RETURN button 56

STOP button 27

PLAY button 26

FWD button 28

REV button 28

T button 31

SLOW buttons 29

COLORSTREAM SELECTOR button 19

A-B RPT button 35

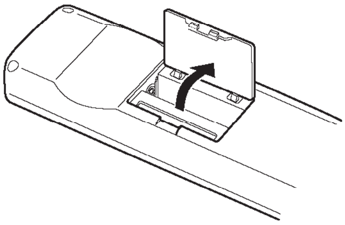
AUDIO button 42

REPEAT button 35

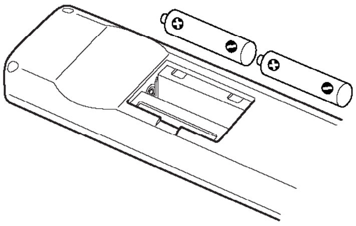
* **MENU button**
Use the MENU button to display the menu included on many DVD video discs. To operate a menu, follow the instructions in “Locating a title using the top menu.” 30

Loading batteries

1 **Open the cover.**

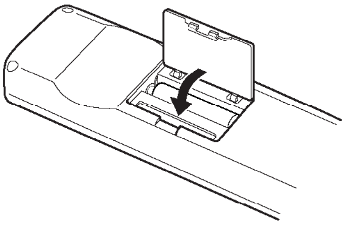


2 **Insert batteries (AA size).**



Make sure to match the + and – on the batteries to the marks inside the battery compartment.

3 **Close the cover.**



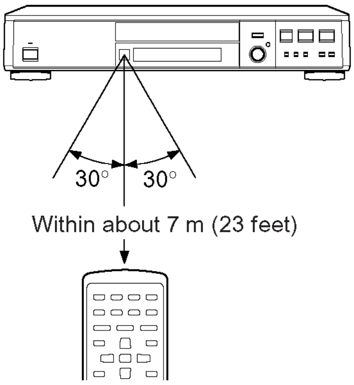
Notes on batteries

Improper use of batteries may cause battery leakage and corrosion. To operate the remote control correctly, follow the instructions below.

- Do not insert batteries into the remote control in the wrong direction.
- Do not charge, heat, open, or short-circuit the batteries. Do not throw batteries into a fire.
- Do not leave dead or exhausted batteries in the remote control.
- Do not use different types of batteries together, or mix old and new batteries.
- If you do not use the remote control for a long period of time, remove the batteries to avoid possible damage from battery corrosion.
- If the remote control does not function correctly or if the operating range becomes reduced, replace all batteries with new ones.
- If battery leakage occurs, wipe the battery liquid from the battery compartment, then insert new batteries.

Operating with the remote control

Point the remote control at the remote sensor and press the buttons.



Distance: About 7 m (23 feet) from the front of the remote sensor
Angle: About 30° in each direction of the front of the remote sensor

* Do not expose the remote sensor of the DVD player to a strong light source such as direct sunlight or other illumination. If you do so, you may not be able to operate the DVD player via the remote control.

Notes on the remote control

- Direct the remote control at the remote sensor of the DVD player.
- Do not drop or give the remote control a shock.
- Do not leave the remote control near an extremely hot or humid place.
- Do not spill water or put anything wet on the remote control.
- Do not open the remote control.

Connections

Read this chapter first to make all necessary preparations.

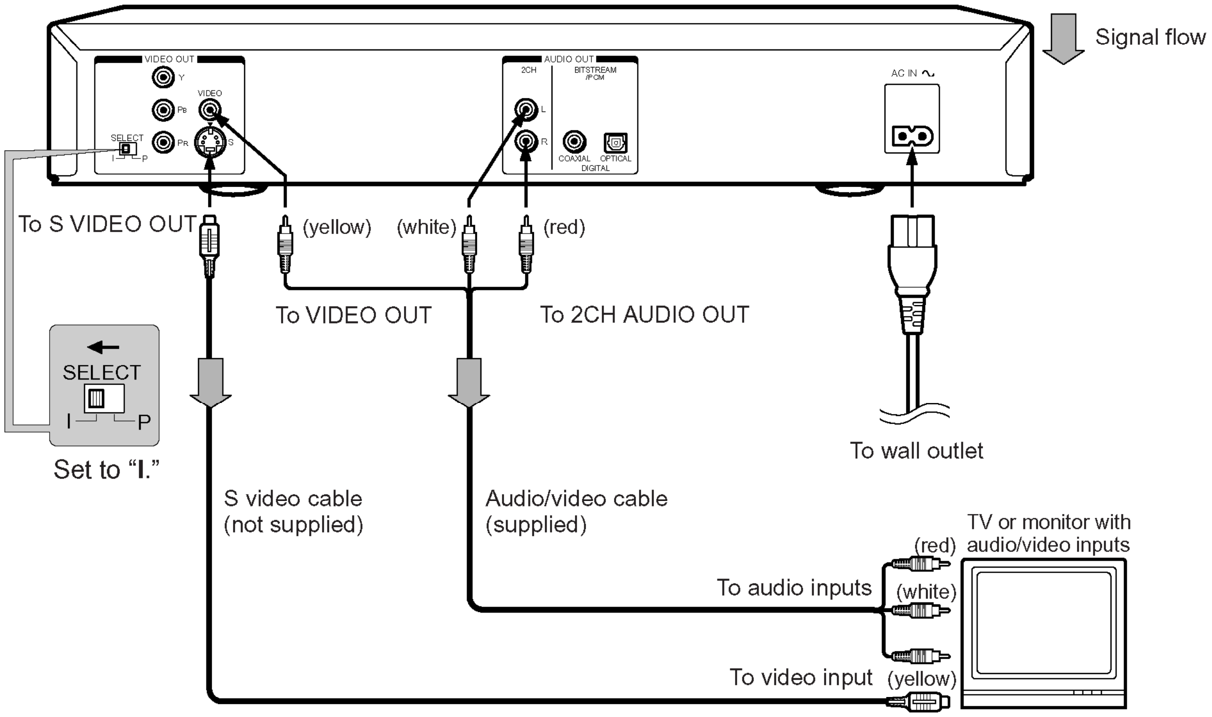
- **Connecting to a TV**
- **Connecting to an audio system and TV equipped with component video inputs**
- **Connecting to an amplifier equipped with a Dolby Digital decoder**
- **Connecting to an amplifier equipped with Dolby Pro Logic Surround**
- **Connecting to an amplifier equipped with a DTS decoder**
- **Connecting to an amplifier equipped with an MPEG2 audio decoder**
- **Connecting to an amplifier equipped with a digital audio input**

Connecting to a TV

Connect the DVD player to your TV.

For details of output sound, see 43.

Connecting to a TV


Signal flow
VIDEO OUT
Y
PB
PR
VIDEO
S
SELECT
I P
AUDIO OUT
2CH
BITSTREAM /PCM
L
R
COAXIAL
OPTICAL
DIGITAL
AC IN
To S VIDEO OUT
(yellow)
(white)
(red)
To VIDEO OUT
To 2CH AUDIO OUT
SELECT
I P
Set to "I."
To wall outlet
S video cable (not supplied)
Audio/video cable (supplied)
TV or monitor with audio/video inputs
(red)
To audio inputs
(white)
To video input
(yellow)
To S video input

If the TV has an S video input, connect the DVD player with an S video cable. When using an S video cable, do not connect the yellow video cable.

- Make the following setting.

On-screen display	Select:	Page
"Audio Out Select"	"Bitstream" or "PCM"	56 59

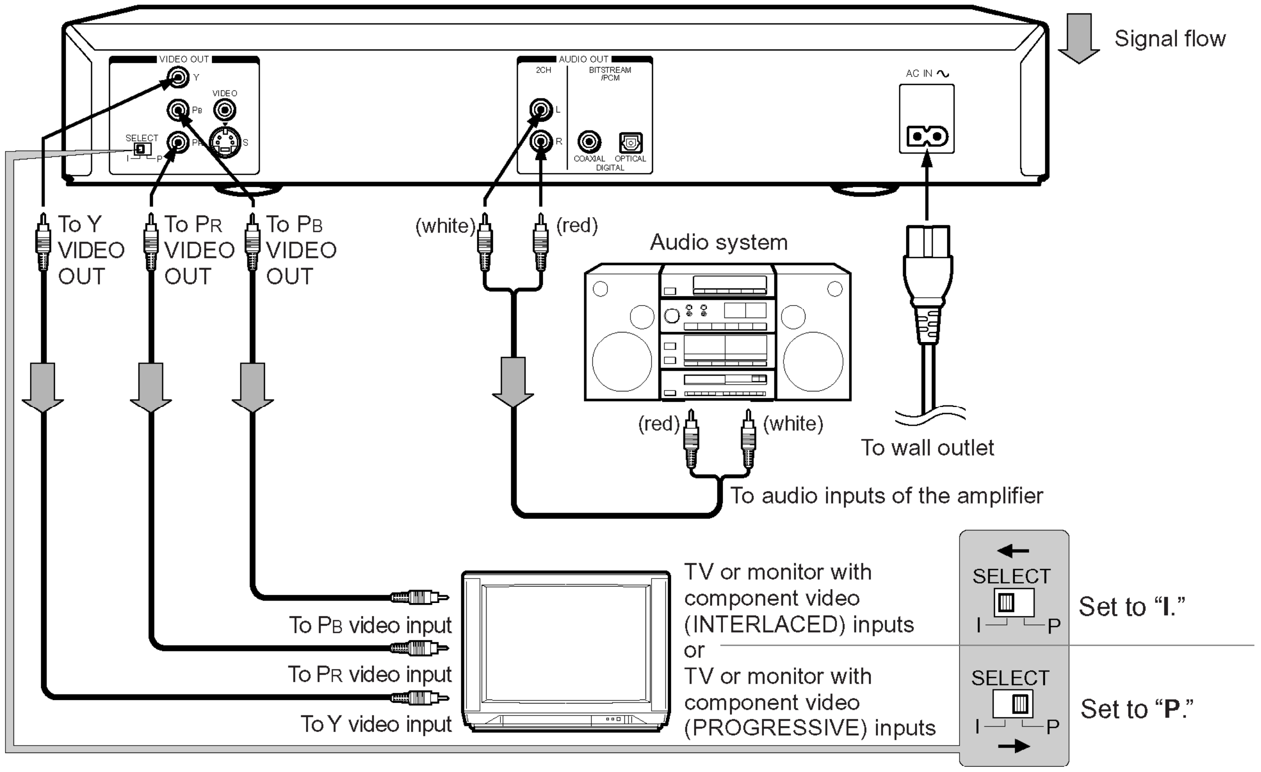
Notes

- Refer to the owner's manual of the connected TV as well.
- When you connect the DVD player to your TV, be sure to turn off the power and unplug both units from the wall outlet before making any connections.
- If your television set has one audio input, connect the left and right audio outputs of the DVD player to a Y cable adapter (not supplied) and then connect to your TV.
- Connect the DVD player directly to your TV. If you connect the DVD player to a VCR, TV/VCR combination or video selector, the playback picture may be distorted as DVD video discs are copy protected.

INTERLACED outputs/inputs (ColorStream®)
Some TVs or monitors are equipped with component video inputs. Connecting to these inputs allows you to enjoy higher quality picture playback.
Actual labels for component video inputs may vary depending on the TV manufacturer. (ex. Y, R-Y, B-Y or Y, CB, CR)
In some TVs or monitors, the color levels of the playback picture may be reduced slightly or the tint may change. In such a case, adjust the TV or monitor for optimum performance.

PROGRESSIVE outputs/inputs (ColorStream®Pro)
Some TVs or monitors are equipped with component video inputs that are capable of reproducing a progressively scanned video signal. Connecting to these inputs allows you to view the highest quality pictures with less flicker.

Connecting to an audio system and TV equipped with component video inputs


Signal flow
VIDEO OUT
Y
VIDEO
PB
PR
S
SELECT
I
P
AUDIO OUT
2CH
BITSTREAM /PCM
L
R
COAXIAL
OPTICAL
DIGITAL
AC IN ~
To Y VIDEO OUT
To PR VIDEO OUT
To PB VIDEO OUT
(white)
(red)
Audio system
(red)
(white)
To wall outlet
To audio inputs of the amplifier
To PB video input
To PR video input
To Y video input
TV or monitor with component video (INTERLACED) inputs
or
TV or monitor with component video (PROGRESSIVE) inputs
SELECT
I
P
Set to "I."
SELECT
I
P
Set to "P."

■ Switching the output signal (interlaced/ progressive) using the remote control (only when the SELECT (I/P) switch is set to "P")

You can temporarily switch the output signal for better picture quality.
Press **COLORSTREAM SELECTOR** on the remote control.

- Make the following setting.

On-screen display	Select:	Page
"Audio Out Select"	"Bitstream" or "PCM"	56 59

Notes

- Refer to the owner's manual of the connected equipment as well.
- When you connect the DVD player to other equipment, be sure to turn off the power and unplug all of the equipment from the wall outlet before making any connections.
- If you place the DVD player near a tuner or radio, the radio broadcast sound might be distorted. In this case, place the DVD player away from the tuner and radio.
- The output sound of the DVD player has a wide dynamic range. Be sure to adjust the receiver's volume to a moderate listening level. Otherwise, the speakers may be damaged by a sudden high volume sound.
- Turn off the amplifier before you connect or disconnect the DVD player's power cord. If you leave the amplifier power on, the speakers may be damaged.
- The S VIDEO OUT jack and the VIDEO OUT jack cannot output video signals, if you select progressive signal when the SELECT (I/P) switch is set to "P."

Connecting to Optional Equipment

You can enjoy high quality dynamic sounds by connecting the DVD player to optional audio equipment.

- For connection to your TV, see “Connecting to a TV” 18 19.
- For details of output sound, see 43.
- This section uses the following reference marks.

■ : Front speaker
□ : Rear speaker
◫ : Sub woofer
▯ : Center speaker
➡ : Signal flow

Notes

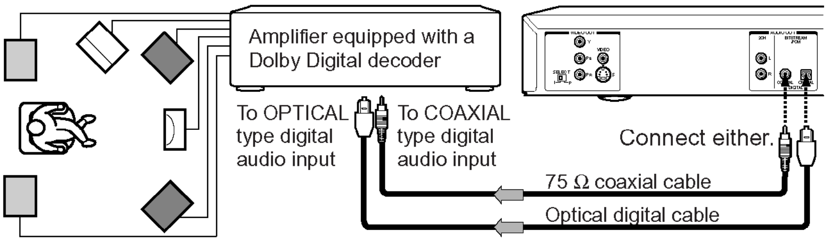
- DO NOT connect the BITSTREAM/PCM (DIGITAL) AUDIO OUT jack of the DVD player to the AC-3 RF input of a Dolby Digital Receiver. This input on your A/V Receiver is reserved for Laserdisc use only and is incompatible with the BITSTREAM/PCM (DIGITAL) AUDIO OUT jack of the DVD player.
- Connect the BITSTREAM/PCM (DIGITAL) AUDIO OUT jack of the DVD player to the “DIGITAL (OPTICAL)” or “DIGITAL (COAXIAL)” input of a Receiver or Processor.
- Refer to the owner’s manual of the connected equipment as well.
- When you connect the DVD player to other equipment, be sure to turn off the power and unplug all of the equipment from the wall outlet before making any connections.
- The output sound of the DVD player has a wide dynamic range. Be sure to adjust the receiver’s volume to a moderate listening level. Otherwise, the speakers may be damaged by a sudden high volume sound.
- Turn off the amplifier before you connect or disconnect the DVD player’s power cord. If you leave the amplifier power on, the speakers may be damaged.

Warning

- When you are connecting (via the BITSTREAM/PCM (DIGITAL) AUDIO OUT jack) an AV decoder that does not have Dolby Digital, Digital Theater Systems (DTS) or MPEG2 decoding function, be sure to set “Audio Out Select” to “PCM” from the on-screen displays 56 59. Otherwise, high volume sound may damage your hearing as well as the speakers.
- When playing DTS-encoded discs (audio CDs), excessive noise may be output from the analog audio output jacks. To avoid possible damage to the audio system, you should take proper precautions when the analog audio output jacks of the DVD player are connected to an amplification system. To enjoy DTS Digital Surround™ playback, an external 5.1 channel DTS Digital Surround™ decoder system must be connected to the BITSTREAM/PCM (DIGITAL) AUDIO OUT jack of the DVD player.

Connecting to an amplifier equipped with a Dolby Digital decoder

Dolby Digital
Dolby Digital is the surround sound technology used in theaters showing the latest movies, and is now available to reproduce this realistic effect in the home. You can enjoy motion picture and live concert DVD video discs with this dynamic realistic sound by connecting the DVD player to a 6 channel amplifier equipped with a Dolby Digital decoder or Dolby Digital processor. If you have a Dolby Pro Logic Surround decoder, you will obtain the full benefit of Pro Logic from the same DVD movies that provide full 5.1-channel Dolby Digital soundtracks, as well as from titles with the Dolby Surround mark.


Amplifier equipped with a Dolby Digital decoder
To OPTICAL type digital audio input
To COAXIAL type digital audio input
Connect either.
75 Ω coaxial cable
Optical digital cable

Manufactured under license from Dolby Laboratories. "Dolby", "Pro Logic" and the double-D symbol are trademarks of Dolby Laboratories. Confidential unpublished works. ©1992-1997 Dolby Laboratories. All rights reserved.

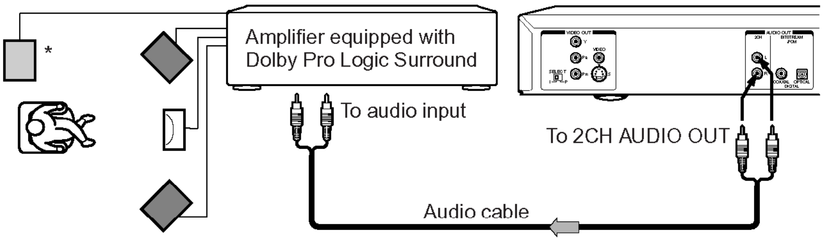
- Use DVD video discs encoded via the Dolby Digital recording system.
- Make the following setting.

On-screen display	Select:	Page
"Audio Out Select"	"Bitstream"	56 59
Recording system	DD D	42

Connecting to an amplifier equipped with Dolby Pro Logic Surround

Dolby Pro Logic Surround
You can enjoy the dynamic realistic sound of Dolby Pro Logic Surround by connecting an amplifier and speaker system (right and left front speakers, a center speaker, and one or two rear speakers).

- With an amplifier equipped with Dolby Digital
  Connect the equipment the same way as described in "Connecting to an amplifier equipped with a Dolby Digital decoder." Refer to that amplifier's owner's manual and set the amplifier so you can enjoy Dolby Pro Logic Surround sound.
- With an amplifier not equipped with Dolby Digital
  Connect the equipment as follows.


*
Amplifier equipped with Dolby Pro Logic Surround
To audio input
To 2CH AUDIO OUT
Audio cable

- Make the following setting.

On-screen display	Select:	Page
"Audio Out Select"	"Bitstream" or "PCM"	56 59

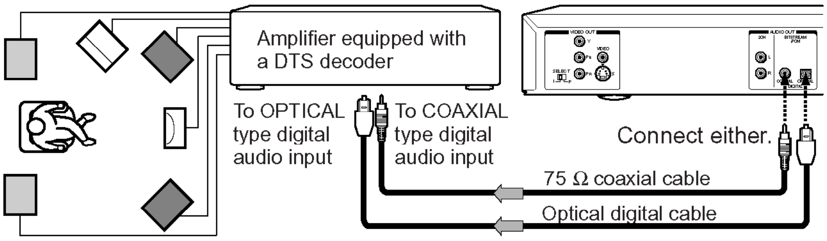
Be sure to set "Audio Out Select" to "Bitstream" or "PCM" when you enjoy sounds of Dolby Pro Logic Surround using this connection.

* Connect one or two rear speakers.
The output sound from the rear speakers will be monaural even if you connect two rear speakers.

Connecting to Optional Equipment (Continued)

Connecting to an amplifier equipped with a DTS decoder

Digital Theater Systems (DTS)
DTS is a high quality surround technology used in theaters and now available for home use, on DVD video discs or audio CDs.
If you have a DTS decoder or processor, you can obtain the full benefit of 5.1 channel DTS encoded sound tracks on DVD video discs or audio CDs.


Amplifier equipped with a DTS decoder
To OPTICAL type digital audio input
To COAXIAL type digital audio input
Connect either.
75 Ω coaxial cable
Optical digital cable

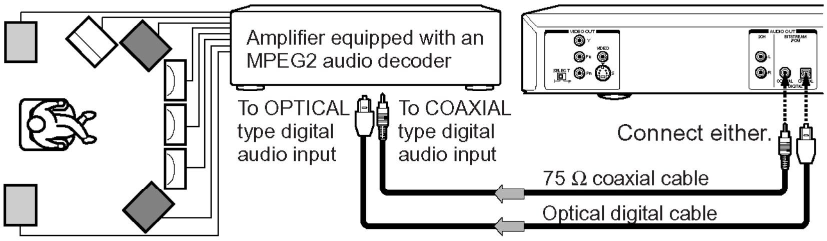
"DTS" and "DTS Digital Surround" are trademarks of Digital Theater Systems, Inc.

- Use DVD video discs or audio CDs encoded via the DTS recording system.
- Make the following setting.

On-screen display	Select:	Page
"Audio Out Select"	"Bitstream"	56 59
Recording system	DTS	42

Connecting to an amplifier equipped with an MPEG2 audio decoder

MPEG2 sound
You can enjoy motion picture and live concert DVD video discs with dynamic realistic sound by connecting an amplifier equipped with an MPEG2 audio decoder or MPEG2 audio processor.

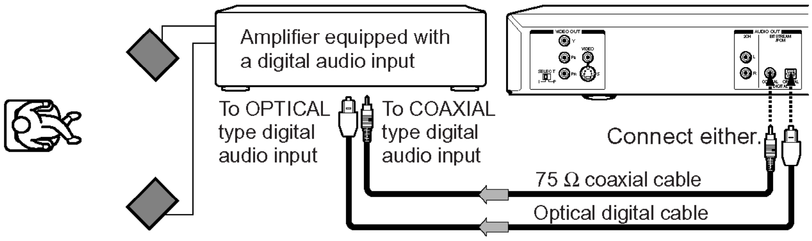

Amplifier equipped with an MPEG2 audio decoder
To OPTICAL type digital audio input
To COAXIAL type digital audio input
Connect either.
75 Ω coaxial cable
Optical digital cable

- Use DVD video discs encoded via the MPEG2 recording system.
- Make the following setting.

On-screen display	Select:	Page
"Audio Out Select"	"Bitstream"	56 59
Recording system	MPEG	42

Connecting to an amplifier equipped with a digital audio input

2 channel digital stereo
You can enjoy the dynamic sound of 2 channel digital stereo by connecting an amplifier equipped with a digital audio input and speaker system (right and left front speakers).


Amplifier equipped with a digital audio input
To OPTICAL type digital audio input
To COAXIAL type digital audio input
Connect either.
75 Ω coaxial cable
Optical digital cable

- Make the following setting.

On-screen display	Select:	Page
"Audio Out Select"	"PCM"	56 59

Basic playback

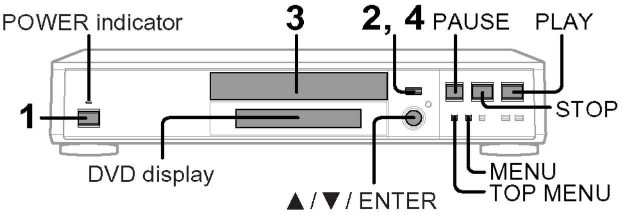
Begin your operation.

- **Playing a Disc**
- **Variable Speed Playback**
- **Locating a Desired Section**

Playing a Disc

This section shows you the basics on how to play a disc.

CAUTION
Keep your fingers well clear of the disc tray as it is closing. Neglecting to do so may cause serious personal injury.

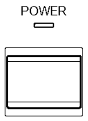


DVD-V VCD CD Basic playback

Preparations

- When you want to view a disc, turn on the TV and select the video input connected to the DVD player.
- When you want to enjoy the sound of discs from the audio system, turn on the audio system and select the input connected to the DVD player.

1 Press the power button (POWER).



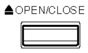
The DVD player turns on and the POWER indicator on the player illuminates.

When the DVD player is turned on for the first time, an on-screen display will appear to provide initial settings. Press the ▲ / ▼ buttons to select an item, and press the ENTER button. See the pages in ⟩, and make a selection using the ▲ / ▼ buttons, then press the ENTER button.

On-Screen Language 60⟩
TV Shape 58⟩

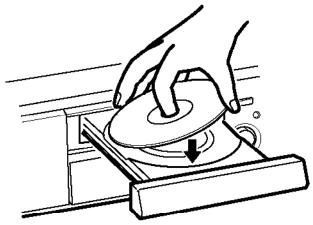
After making all the settings, select “⏎” and press the ENTER button.

2 Press OPEN/CLOSE.



The disc tray opens.

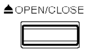
3 Place a disc on the disc tray.



With the playback side down.

- There are two different disc sizes. Place the disc in the correct guide on the disc tray. If the disc is out of the guide, it may damage the disc and cause the DVD player to malfunction.
- Do not place a disc which is unplayable in this DVD player.

4 Press OPEN/CLOSE to close the disc tray.



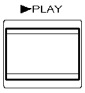
Playback starts.

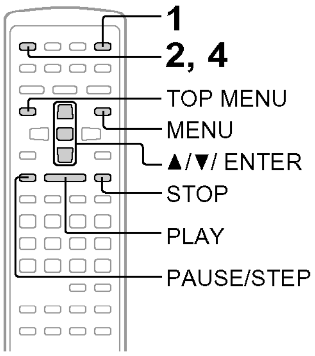
If you insert a DVD video disc that contains a top menu, a menu may appear. See “Locating a title using the top menu.” 30⟩
You may need to press the TOP MENU or MENU button to display disc menu (depending on the actual DVD video disc.)

Note
If the disc tray contains a disc you have already played, playback will begin from the location where you last stopped playback. 29⟩

■ To start playback in the stop mode

Press **PLAY**.





■ To obtain a higher quality picture

Occasionally, some picture noise not usually visible during a normal broadcast may appear on the TV screen while playing a DVD video disc because the high resolution pictures on these discs include a lot of information. While the amount of noise depends on the TV you use with this DVD player, you should generally reduce the sharpness adjustment on your TV when viewing DVD video discs.

■ About DVD-V VCD CD

The DVD-V VCD CD icons on the heading bar show the playable discs for the function described under that heading.

DVD-V : DVD video discs.
VCD : VIDEO CDs.
CD : Audio CDs.

■ To pause playback (still mode)

Press **PAUSE/STEP** during playback.

PAUSE/STEP

To resume normal playback, press the PLAY button.

- Sound is muted during still mode.

■ To stop playback

Press **STOP**.

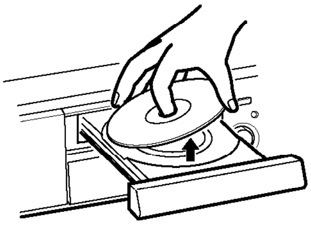
STOP

■ To remove the disc

Press **OPEN/CLOSE**.

OPEN/CLOSE

Remove the disc after the disc tray opens completely.



Be sure to press the OPEN/CLOSE button to close the disc tray after you remove the disc.

■ About the screen saver

If you pause a picture of a DVD video disc and leave it still for a long while, the screen saver of the DVD player automatically appears (when “Screen Saver” is set to “On” 62). To turn off the screen saver, press the PLAY button.

■ Automatic Power Off function

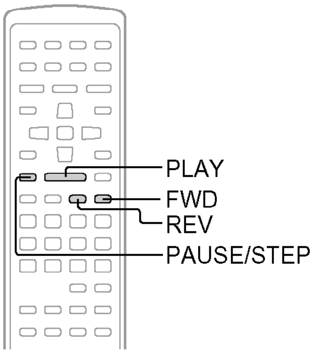
If the DVD player is stopped, or the screen saver is engaged for approximately 20 minutes, the DVD player will automatically turn itself off.

Notes

- Do not move the DVD player during playback. Doing so may damage the disc.
- Use the OPEN/CLOSE button to open and close the disc tray. Do not push the disc tray while it is moving. Doing so may cause the DVD player to malfunction.
- Do not push up on the disc tray or put any objects other than discs on the disc tray. Doing so may cause the DVD player to malfunction.
- In many instances, a menu screen will appear after playback of a movie is completed. Prolonged display of an on-screen menu may damage your television set, permanently etching that image onto its screen. To avoid this, be sure to press the STOP button on your remote control once the movie is completed.

Variable Speed Playback

You can play discs at various speeds, and resume playback from the location where you stopped playback.



DVD-V VCD CD Playing in fast reverse or fast forward directions

Press REV or FWD during playback.

REV : Fast reverse playback
FWD: Fast forward playback

Each time you press the REV or FWD button, the playback speed changes.

■ **To resume normal playback**

Press **PLAY**.

Notes

- The DVD player mutes sound and omits subtitles during reverse and forward scan of DVD video discs.
- The playback speed may differ depending on the disc.

DVD-V VCD CD Playing frame by frame

Press PAUSE/STEP during still playback.

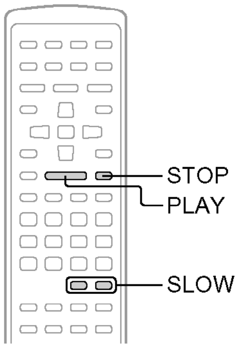
Each time you press the PAUSE/STEP button, the picture advances one frame.

■ **To resume normal playback**

Press **PLAY**.

Note

The sound is muted during frame by frame playback.



DVD-V VCD CD Playing in slow-motion

Press SLOW during playback.

SLOW ◄I I►

Each time you press the SLOW I► button, the slow-motion speed changes.

SLOW ◄I I►

If you press the SLOW ◄I button during playback, you can view the picture in reverse slow-motion. (Only when using a DVD video disc.)

Each time you press the SLOW ◄I button, the slow-motion speed changes.

■ To resume normal playback

Press **PLAY**.

PLAY ►

Notes

- The sound is muted during slow-motion playback.
- The playback speed may differ depending on the disc.

DVD-V VCD CD Resuming playback from the same location

1 Press STOP at the location where you want to interrupt playback.

STOP ■

The DVD player memorizes the location where playback is stopped.

2 Press PLAY.

PLAY ►

The DVD player resumes playback from the location where you stopped playback.

■ To start playback from the beginning regardless of the location where you stopped playback

1 Press **STOP** twice.

STOP ■

The DVD player effaces the memory of the location.

2 Press **PLAY**.

PLAY ►

DVD-V Playback starts from the beginning of the current title.

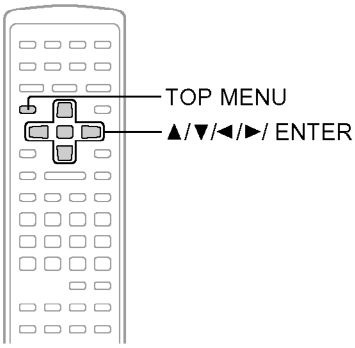
VCD CD Playback starts from the beginning of the disc.

- If you want to return to the beginning of a DVD video disc, open and close the disc tray once with the OPEN/CLOSE button before pressing the PLAY button.

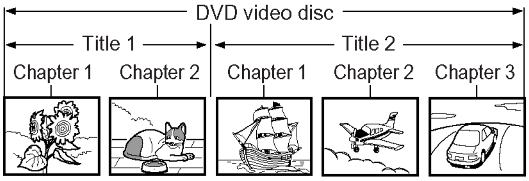
Notes

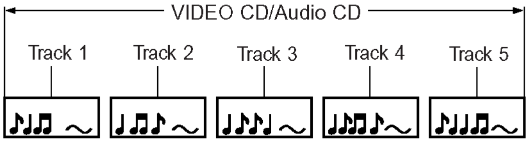
- Resuming cannot function when:
  - you change the parental lock setting 62 or select a disc menu language 60.
  - you play a PBC-featured VIDEO CD while “PBC” 64 is set to “On.”
  - you open the disc tray.
- There may be a difference in the location where playback resumes depending on the disc.
- Settings you changed using the on-screen displays while the DVD player keeps a location in the memory may function only after the memory is cleared.

Locating a Desired Section


TOP MENU
▲/▼/◄/►/ ENTER

Normally, DVD video discs are divided into titles, and the titles are sub-divided into chapters. VIDEO CDs and audio CDs are divided into tracks. You can quickly locate any specific title, chapter, or track.


DVD video disc
Title 1
Title 2
Chapter 1
Chapter 2
Chapter 1
Chapter 2
Chapter 3


VIDEO CD/Audio CD
Track 1
Track 2
Track 3
Track 4
Track 5

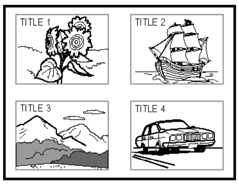
DVD-V VCD CD Locating a title using the top menu

1 Press TOP MENU.

TOP MENU

The top menu appears on the TV screen.

e.g.


TITLE 1
TITLE 2
TITLE 3
TITLE 4

2 Press ▲ / ▼ / ◄ / ► to select the title you want.

If the titles in the top menu are assigned a number, you can directly locate a specific title by pressing its designated number with the number buttons.

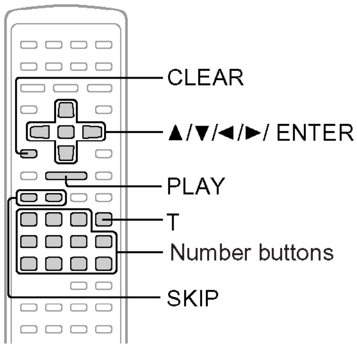
3 Press ENTER.

ENTER

Playback starts from chapter 1 of the selected title.

Notes

- The instructions above describe basic procedures which may vary depending on the contents of the DVD video disc. If different instructions appear on the TV screen, follow those instructions.
- If you display the top menu during playback and press the TOP MENU button again without selecting any title, the DVD player may resume playback from the point where you first pressed the TOP MENU button (depending on the actual DVD video disc.)
- This method of locating a title is available only on a disc that contains a top menu.
- Instruction notes of discs may refer to the button that displays the top menu as TITLE button.

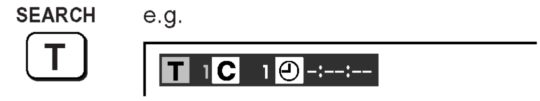


DVD-V VCD CD Locating a desired section by entering the corresponding number

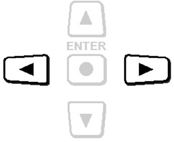
1 Press T.

If you are using a VIDEO CD/audio CD, skip steps 1 and 2. Then at step 3, enter the number for the track you want using the number buttons.

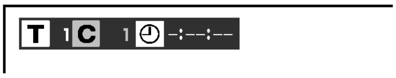
e.g.



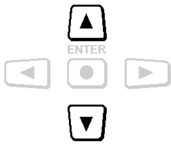
2 Press ◄ / ► to select a section you want to locate.



e.g. When you want to locate a chapter.



3 Press ▲ / ▼ to enter a number of the section.



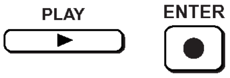
Also the number buttons are available.

e.g. To enter 25

2 → 5 or +10 → +10 → 5

4 Repeat steps 2 and 3 if necessary.

5 Press PLAY or ENTER.



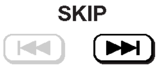
Playback starts from the selected section.

Notes
- Pressing the CLEAR button resets the numbers. To clear the display, press the T button several times.
- This method of locating a title is available only on a disc that contains title numbers.

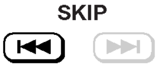
DVD-V VCD CD Locating a specific chapter or track

Press SKIP ⏮ or ⏭ repeatedly to display the chapter or track number you want.

Playback starts from the selected chapter or track.



To locate succeeding chapters or tracks.



Playback starts from the beginning of the current chapter or track.
When you press twice, playback starts from the beginning of the preceding chapter or track.

Notes
- Some titles may not display chapter numbers.
- When you set “Title Stop” to “Off” 64, you can access chapters in another title. If you go back to the preceding title by pressing the SKIP ⏮ button, the DVD player locates the first chapter of the title. When “Title Stop” is set to “On,” you can access chapters only within the current title.
- If you press and hold the SKIP ⏮ or ⏭ button on the front panel during playback, the DVD player performs fast reverse or fast forward playback. You can vary the speed by pressing the button further.
  To locate chapters or tracks during fast reverse or fast forward playback, first press the PLAY button to resume normal playback, then use the SKIP ⏮ or ⏭ button.

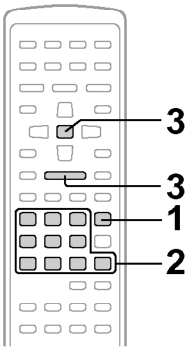
Advanced playback

Customizing the performance of your DVD player.

- Accessing a Specific Location Directly
- Playing Repeatedly
- Playing in a Favorite Order
- Playing in Random Order
- Zooming a Picture
- Selecting the Sound Enhancement (E.A.M.)
- Selecting the Camera Angle
- Selecting Subtitles
- Selecting a Language

Accessing a Specific Location Directly

You can access a specific location by entering its corresponding time (hours, minutes, seconds).



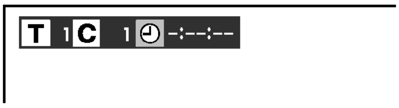
DVD-V VCD CD Entering the time counter of the desired location

1 Press T several times.

SEARCH
T

You may have to press further depending on the disc. Press the button repeatedly until the clock icon is highlighted.

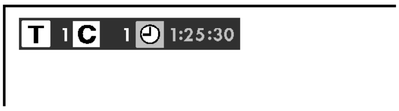
e.g.


T 1 C 1 -:--:--

2 Press the number buttons to enter the time.

e.g.

1 → 2 → 5 → 3 → 0


T 1 C 1 1:25:30

3 Press PLAY or ENTER.

PLAY
▶

ENTER
●

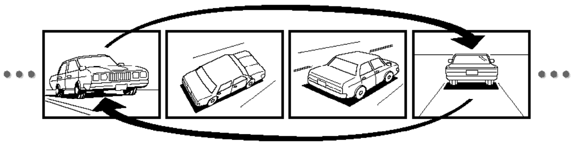
Playback starts from the desired location.

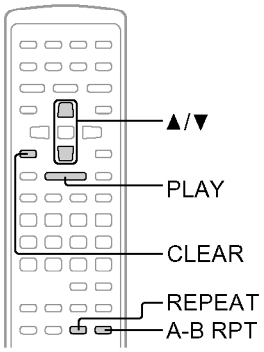
Notes

- Some discs may not respond to this process.
- Some scenes may not be located precisely as you specified.
- This method for accessing specific locations is available only within the current title of the DVD video disc or within the current track of the VIDEO CD/audio CD.

Playing Repeatedly

You can play a specific title, chapter, track, or segment repeatedly.





DVD-V VCD CD Repeating a title, chapter, or track

1 **Press REPEAT.**

REPEAT

The mode menu appears.

2 **Press REPEAT or ▲ / ▼ repeatedly to select the repeat playback mode.**

REPEAT

The mode changes as follows (when using the REPEAT button):

DVD-V Chapter Repeat
↓
DVD-V Title Repeat
VCD CD Track Repeat
↓
DVD-V VCD CD All Repeat
↓
Repeat off

Chapter Repeat:	Repeats the current chapter.
Track Repeat:	Repeats the current track.
Title Repeat	Repeats the current title.
All Repeat:	Repeats the entire disc.
Repeat Off:	Resumes normal playback.

If you select the mode during playback, the DVD player automatically starts repeat playback after finishing the current title, chapter, or track.

3 **Press PLAY.**

PLAY ►

The DVD player starts repeat playback.
Press the PLAY button within about 5 seconds after you press the REPEAT button.

■ To resume normal playback

Press **CLEAR**.

CLEAR

Note

Some discs may not permit repeat operation.

DVD-V VCD CD Repeating a specific segment

1 **Press A-B RPT at the beginning of the segment (point A) you want to play repeatedly.**

A-B RPT

A–

2 **Press A-B RPT again at the end of the segment (point B).**

A-B RPT

The DVD player automatically returns to point A and starts repeat playback of the selected segment (A-B).

A–B Repeat

■ To resume normal playback

Press **CLEAR**.

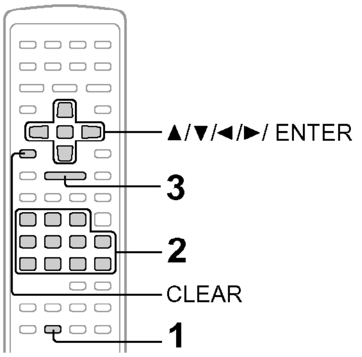
CLEAR

Notes

- Some discs may not permit A-B repeat operation.
- You cannot set the A-B repeat function for a segment that includes multiple camera angles 40.
- You can specify a segment only within the current title.
- There may be a slight difference between point A and the location where playback actually resumes depending on the disc.

Playing in a Favorite Order

You can combine your favorite titles, chapters, or tracks and play them in the order you determine. You can program up to 30 selections into the memory. (Memory playback)

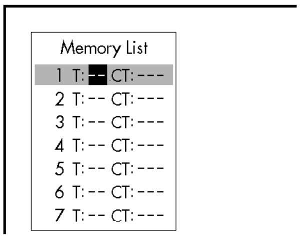


DVD-V VCD CD Setting titles, chapters, or tracks in a favorite order

1 Insert a disc and press MEMORY during stop.

MEMORY

The following display appears.



```
Memory List
1 T:-- CT:---
2 T:-- CT:---
3 T:-- CT:---
4 T:-- CT:---
5 T:-- CT:---
6 T:-- CT:---
7 T:-- CT:---
```

T: Title number
CT: Chapter number or track number

2 Select the items in the order you want by pressing the number buttons, then ENTER for each item.

Each time you press the ◄ / ► buttons, the spaces of "T" and "CT" are highlighted in turn. Highlight where you want to enter, then press the corresponding number buttons.

To select tracks from a VIDEO CD/audio CD in order, press the **number buttons** for the track, then press the **ENTER** button for each selection you want.

Note
The space of "T (Title)" may be showing a number. Neglect this number when using a VIDEO CD/audio CD.

To select another chapter in the same title, you do not need to select the title number.

3 Press PLAY while the display appears on the TV screen.

PLAY ►

The DVD player starts memory playback.

■ To change the programmed selections

1 While the display appears on the TV screen, press the ▲ / ▼ / ◄ / ► buttons to highlight the item you want to change.
2 Change the selection following the instructions in step **2**.

■ To cancel the programmed selections

1 While the display appears on the TV screen, press the ▲ / ▼ buttons to highlight the item you want to cancel.
2 Press **CLEAR**.

■ To resume normal playback from memory playback

Press **CLEAR**.

CLEAR

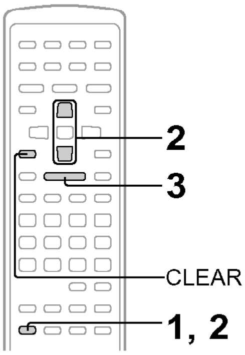
The memory playback indicator disappears.

Notes

- Some discs may not permit memory playback operation.
- If you press the REPEAT button during memory playback, the DVD player repeats the current memory playback.
- If you press the MEMORY or RETURN button while the display appears on the TV screen, the display disappears.
- The programmed selections will be cleared when:
  – you turn off the DVD player.
  – you open the disc tray.

Playing in Random Order

You can play titles, chapters, or tracks in random order. (Random playback)



DVD-V VCD CD Playing titles, chapters, or tracks in random order

1 Press RANDOM.

RANDOM

The mode menu appears.

2 Press RANDOM or ▲ / ▼ repeatedly to select the random playback mode.

RANDOM

▲ ▼

The mode changes as follows (when using the RANDOM button):

DVD-V	Chapter Random	Plays the chapters within the current title in random order.
DVD-V	Title Random	Plays titles in random order.
VCD	Track Random	Plays tracks in random order.
CD	Track Random	Plays tracks in random order.
	Random Off	Resumes normal playback.

If you select the mode during playback, the DVD player automatically starts random playback after finishing the current title, chapter, or track.

3 Press PLAY.

PLAY ▶

The DVD player starts random playback.
Press the PLAY button within about 5 seconds after you press the RANDOM button.

■ To resume normal playback

Press **CLEAR**.

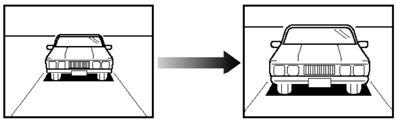
CLEAR

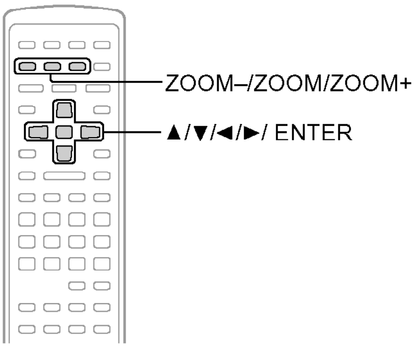
Notes

- Some discs may not permit random playback operation.
- You cannot use the random playback function in conjunction with the memory playback function.

Zooming a Picture

You can magnify areas within a picture.





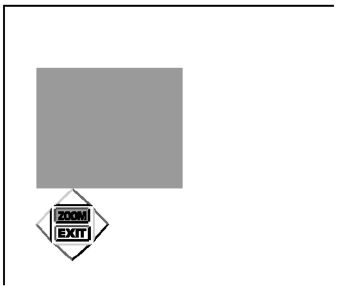
DVD-V VCD CD

Zooming a picture

1 During normal, slow or still playback, press ZOOM, ZOOM+ or ZOOM–.

The DVD player enters the zoom playback mode, and a monitor scope and an icon appear.

e.g.

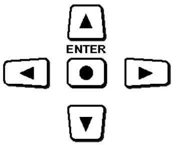


2 Select the zoom point and magnification level.

Magnification level

- To use the fixed levels:
  You can select from the followings.
  - Magnification
  - Image reduction
  - Normal playback

Press the **ZOOM** button repeatedly.



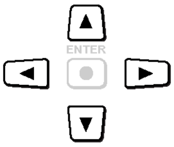
Alternatively press the ▲/▼/◄/► buttons to select "ZOOM" on the icon, and press the **ENTER** button repeatedly.

- To zoom in (or to zoom out):

Press repeatedly or press and hold the **ZOOM+** (or **ZOOM–**) button.

Zoom point

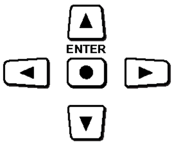
To shift:



Press the ▲/▼/◄/► buttons.

■ To hide the monitor scope and the icon during zoom playback

Press ▲/▼/◄/► to select "EXIT," and press **ENTER**.



■ To resume normal playback

Press **ZOOM** repeatedly until the monitor scope and the icon disappear.

Alternatively press ▲/▼/◄/► to select "ZOOM" on the icon, and press **ENTER** repeatedly until the monitor scope and the icon disappear.

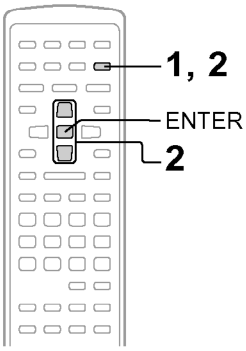
Notes

- Some discs may not respond to zoom feature.
- During some scenes, the buttons may not work as described.
- Zooming does not work on subtitles or menus included on DVD video discs.
- While the icon is displayed, the ▲/▼/◄/►/ENTER buttons cannot work on menus included on DVD video discs. If you want to view the menus, cancel the zoom playback.
- The magnification level varies depending on the picture size you select. 58

Selecting the Sound Enhancement (E.A.M.*)

You can easily switch a preferred audio enhancement.

*E.A.M.: Enhanced Audio Mode

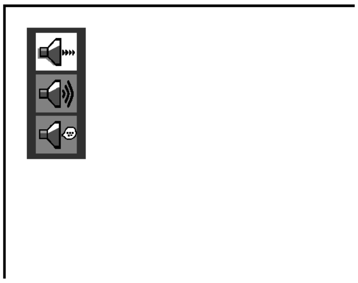


DVD-V VCD CD Selecting the sound enhancement

1 **Press E.A.M.**

E.A.M

The sound enhancement menu appears.



2 **Press E.A.M or ▲ / ▼ repeatedly to select the sound enhancement.**

E.A.M

▲ ENTER ● ◄ ► ▼

Normal:

Normal sound.

3D (N-2-2):

To obtain expansive virtual surround sound effects from just two speakers.

Dialogue:

To control critical center channel information to make dialogue more intelligible (only when playing a DVD video disc recorded on the Dolby Digital recording system).

- To use this enhancement on sounds output from the BITSTREAM/PCM (DIGITAL) AUDIO OUT jack, be sure to set “Audio Out Select” to “PCM”. 59

■ To exit the audio enhancement selection

Press **ENTER**.

ENTER ●

Alternatively leave the DVD player unattended for about 5 seconds after having made a selection.

Notes

- Actual effects to sounds may vary depending on the speaker systems. Make selection according to your preference.
- Actual effects to sounds may vary depending on the disc.
- When the DVD player is connected to an amplifier equipped with Dolby Pro Logic Surround, select “Normal”. Otherwise, Dolby Pro Logic Surround may function differently than usual.
- Selecting “Dialogue” disables “Dynamic Range Control” function 59.

Spatializer® 3-Dimensional Sound Processing provided by Desper Products. Inc.
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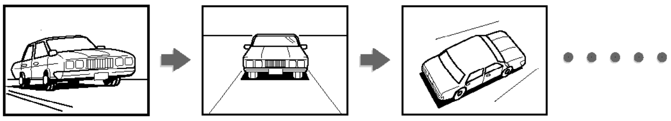
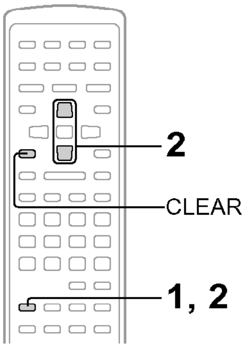
Selecting the Camera Angle

If the scene was recorded from multiple angles, you can easily change the camera angle of the scene you are watching.





DVD-V VCD CD

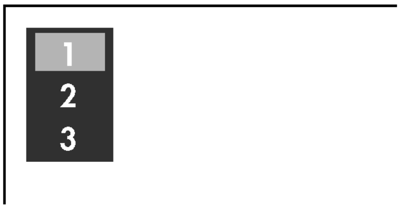
Changing the camera angle

1 Press ANGLE while playing a scene recorded with multiple angles.

ANGLE

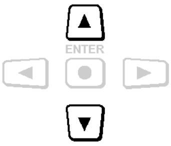
While playing a scene recorded with multiple angles, the angle icon (🎥) flashes in the DVD display.
Press the ANGLE button while the angle icon is flashing.

e.g.



2 Press ANGLE or ▲ / ▼ while the angle number is displayed on the TV screen.

ANGLE



Each time you press the ANGLE button or the ▲ / ▼ buttons, the camera angle changes.

You can change the camera angle directly by pressing the number buttons corresponding to its angle number instead of using the ▲ / ▼ buttons.

■ **To turn off the angle number display**

Press **CLEAR**.

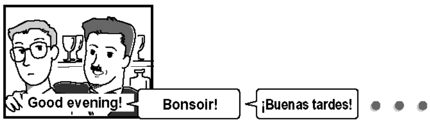
CLEAR

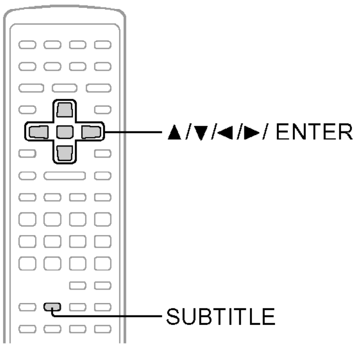
Notes

- You can change the camera angle during still playback. The camera angle changes to the new setting when you resume normal playback.
- If you pause a picture immediately after changing a camera angle, the resumed playback picture may not display the new camera angle.

Selecting Subtitles

You can display subtitles on the TV screen and select a subtitle language from those included on the DVD video disc.


Good evening!
Bonsoir!
¡Buenas tardes!



DVD-V VCD CD Selecting a subtitle language

1 Press SUBTITLE during playback.

SUBTITLE

The current subtitle setting is displayed.

e.g.

Off
ENG1
FRE1
SPA1

The abbreviation of the language appears instead of the language name. Refer to the list of languages and their abbreviations. 65

2 Press SUBTITLE or ▲ / ▼ while the subtitle setting is displayed on the TV screen.

SUBTITLE

Each time you press the SUBTITLE button or the ▲ / ▼ buttons, the subtitle languages included on the DVD video disc change.

To turn off the subtitle setting display, press the ENTER button.

■ To turn subtitles on or off

1 Press **SUBTITLE** during playback.

SUBTITLE

2 Press ◄ / ► while the subtitle setting is displayed on the TV screen, to select “On” or “Off.”

Notes

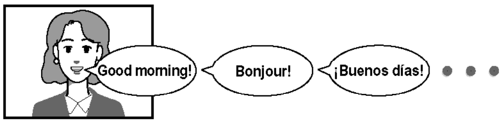
- Some DVD video discs are set to display subtitles automatically, and you cannot turn them off even if you set the subtitle function to off.
- During some scenes, the subtitles may not appear immediately after you select “On.”
- Some DVD video discs will allow you to make subtitle selections and turn subtitles on or off only via the disc menu.

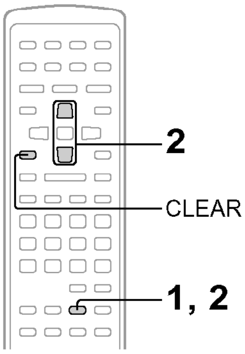
Notes

- When you turn on the DVD player or replace a disc, the player returns to the initial default setting 61.
  When you select a subtitle language which is not included on the disc, the DVD player plays a prior language programmed on the disc.
- During some scenes, the subtitles may not appear immediately after you change the subtitle language.

Selecting a Language

You can select a preferred language and sound recording system from those included on the disc.


Good morning!
Bonjour!
¡Buenos días!
• • •



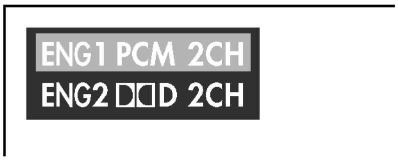
DVD-V VCD CD Selecting a playback audio setting

1 **Press AUDIO during playback.**

AUDIO

The current audio setting is displayed.

e.g.



ENG1 PCM 2CH
ENG2 ◻◻D 2CH

The abbreviation of the language appears instead of the language name. Refer to the list of languages and their abbreviations. 65

2 **Press AUDIO or ▲ / ▼ while the audio setting is displayed on the TV screen.**

AUDIO

Each time you press the AUDIO button or the ▲ / ▼ buttons, the audio settings included on the disc change.

▲ ENTER ◄ ● ► ▼

If you press the ◄ / ► buttons, you can select output sound format. 59

To turn off the audio setting display, press the CLEAR button.

■ Selecting sound channels of VIDEO CDs

You can switch left and right channels by pressing the **AUDIO** button repeatedly during playback.

AUDIO

Notes

- When you turn on the DVD player or replace a disc, player returns to the initial default setting 61.
  If you select a sound track which is not included on the disc, the DVD player plays a prior sound track programmed on the disc.
- Some discs allow you to change audio selections only via the disc menu. If this is the case, press the MENU button and choose the appropriate language from the selections on the disc menu.

■ Output sound conversion table (sampling frequency/quantization bit)

Discs	Sound recording system		Audio selection from the menu 56 59 and output jacks on the rear panel			
			"Bitstream"		"PCM"	
			BITSTREAM/PCM jack	2CH AUDIO OUT jacks	BITSTREAM/PCM jack	2CH AUDIO OUT jacks
DVD video discs	Dolby Digital		Bitstream	48 kHz/20 bit	48 kHz/20 bit	48 kHz/20 bit
	Linear PCM	48 kHz/16 bit	48 kHz/16 bit	48 kHz/16 bit	48 kHz/16 bit	48 kHz/16 bit
		48 kHz/20 bit	48 kHz/20 bit	48 kHz/20 bit	48 kHz/20 bit	48 kHz/20 bit
		48 kHz/24 bit	48 kHz/24 bit	48 kHz/24 bit	48 kHz/24 bit	48 kHz/24 bit
		96 kHz/16 bit	96 kHz/16 bit	96 kHz/16 bit	96 kHz/16 bit	96 kHz/16 bit
		96 kHz/20 bit	96 kHz/20 bit	96 kHz/20 bit	96 kHz/20 bit	96 kHz/20 bit
		96 kHz/24 bit	96 kHz/24 bit	96 kHz/24 bit	96 kHz/24 bit	96 kHz/24 bit
	DTS		Bitstream	–	–	–
	MPEG1, MPEG2		Bitstream	48 kHz/16 bit	48 kHz/16 bit	48 kHz/16 bit
VIDEO CDs	MPEG1		44.1 kHz/16 bit	44.1 kHz/16 bit	44.1 kHz/16 bit	44.1 kHz/16 bit
Audio CDs	Linear PCM 44.1 kHz/16 bit		44.1 kHz/16 bit	44.1 kHz/16 bit	44.1 kHz/16 bit	44.1 kHz/16 bit
	DTS		Bitstream	(Noise)	Bitstream	(Noise)

▨ : 3D (N-2-2) sound enhancement can function.
(Signals are depressed by down sampling process.)

- Signals of 96kHz from the BITSTREAM/PCM jack are depressed to 48 kHz by down sampling process when:
  - "3D (N-2-2)" is selected. 39
  - "PCM Down Sampling" is set to "On." 59
  - a copyright protected disc is played.
- Quantization bit of signals of 20 bit or higher is 16 bit if they are in a copyright protected disc.

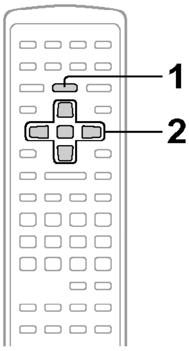
Quick control

Simple use of a single button and the cursor control enables you to direct your playback, without manipulating many actual buttons.

- Using the Graphic Remote Control - V-REMOTE -
- Selecting the Playback Function - QUICK -
- Accessing Features - NAVI -

Using the Graphic Remote Control
- V-REMOTE -

Pressing one button can display a graphics based on-screen remote control that allows you to control playback as if you were doing it from the actual remote control.

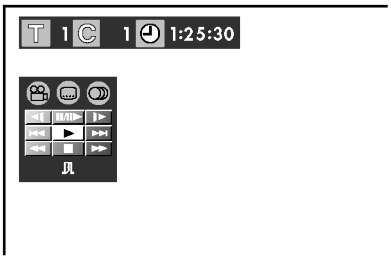


DVD-V VCD CD Using the graphic remote control

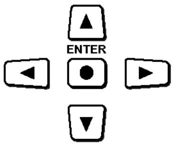
1 During playback, press V-REMOTE.

The graphic remote control (Virtual Remote) appears.
For the meaning of each icon, see right.

e.g. DVD-V



2 Press ▲/▼/◄/► to select the icon, and press ENTER.



■ **To turn off the Virtual Remote**

Press **V-REMOTE**.

Note

Some discs may not permit this operation.

■ **Icons and features**

See the pages in ▭ for details on the features.

Icon	Function	Page
T*	Current title/track number	–
C*	Current chapter number	–
◷*	Elapsed time of the current title/track	–
◎))**	Audio setting	42
▭**	Subtitle setting	41
⌂**	Angle setting	40
◄❙	Reverse slow motion playback	29
❙❙/❙❙►	Pause / Frame by frame playback	28
❙►	To begin slow motion playback	29
❙◄◄	Playback starts from the beginning of the current chapter or track.	31
►	Normal playback	26
►►❙	To locate succeeding chapters or tracks.	31
◄◄	Fast reverse playback	28
■	To stop playback.	27
►►	Fast forward playback	28
Л	To turn off the Virtual Remote.	

* You can access a desired location. After step 2, perform the steps below:

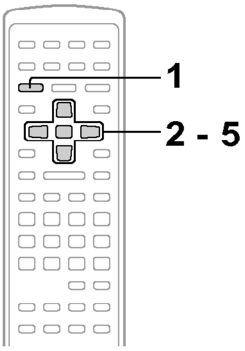
T / C : steps 3 to 5 on 31

◷ : steps 2 and 3 on 34

** After step 2, a sub menu will appear. Perform step 2 on the page in ▭.

Selecting the Playback Function - QUICK -

Pressing one button can display a list of playback functions which are relevant to your current playback mode. You can check and modify them from the list.

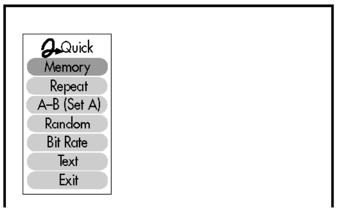


DVD-V VCD CD Selecting the playback function

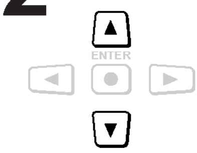
1 During playback, press QUICK.

The following on-screen display appears.
(The actual display will vary depending on the playback status.)

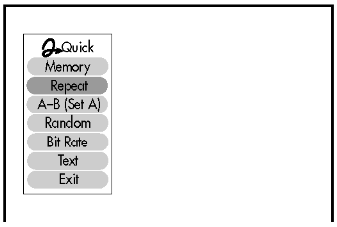
e.g. DVD-V


Quick
Memory
Repeat
A-B (Set A)
Random
Bit Rate
Text
Exit

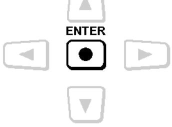
2 Press ▲ / ▼ to select a desired item.



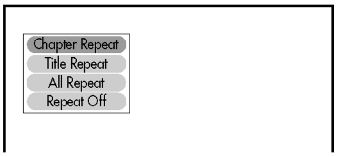
e.g. To change the repeat mode:


Quick
Memory
Repeat
A-B (Set A)
Random
Bit Rate
Text
Exit

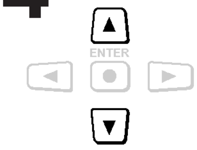
3 Press ENTER.



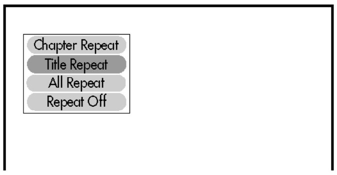
e.g. The mode menu appears.


Chapter Repeat
Title Repeat
All Repeat
Repeat Off

4 Press ▲ / ▼ to change the setting.



e.g. To select the title repeat mode:


Chapter Repeat
Title Repeat
All Repeat
Repeat Off

5 Press ENTER.

The on-screen display disappears and playback will resume according to your selection.

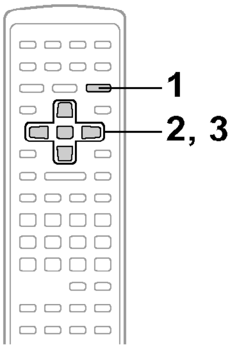
■ Quick menu

Memory :	To program memory playback. 36
Repeat :	To select the repeat playback mode. For the mode selections, see page 35.
A-B (Set A) :	At the beginning of a segment you want to repeat, press the ENTER button. Then at the end of the segment, press the ENTER button again. The segment is played repeatedly. 35
Random :	To select the random playback mode. For the mode selections, see page 37.
Bit Rate :	To activate the bitrate display. (Bit rate: data transfer rate (Mbit/s) Amount of picture, sound and subtitle data in the DVD video disc transferred per second. The larger the value, the more data processed, but this does not necessarily insure better picture quality.)
Text :	To activate the Text display. Text display: Displays DVD-Text data or CD-Text data if included on the disc. (Some content on the disc may not be displayed properly depending on the disc.)
Exit :	To quit the on-screen display.

Note
Pressing the QUICK button again also exits the on-screen display.

Accessing Features - NAVI -

The NAVI menu provides an icon based display from which you can easily access key playback function or setting.



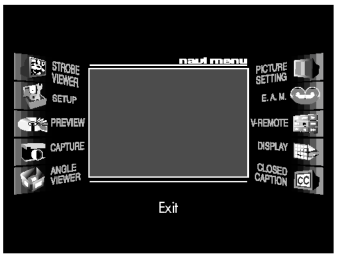
DVD-V VCD CD NAVI menu items

1 **Press NAVI.**

NAVI

The NAVI menu appears.

e.g. DVD-V


navi menu
STROBE VIEWER
SETUP
PREVIEW
CAPTURE
ANGLE VIEWER
PICTURE SETTING
E.A.M.
V-REMOTE
DISPLAY
CLOSED CAPTION
Exit

2 **Press ▲ / ▼ / ◀ / ▶ to select a desired feature icon.**

ENTER

For details on each feature, refer to the list on the next page.

3 **Press ENTER.**

ENTER

Selection details appears.

4 **Refer to the list on the next page and follow the instructions detailed on subsequent pages.**

■ To exit the NAVI menu

Press **NAVI**.

NAVI

Alternatively press ◀ / ▶ to remove the highlight from an icon to the center position, and press **ENTER**.

ENTER

Note

Depending on the disc, some features cannot be accessed.

Navi menu selections

Strobe Viewer	You can divide a desired scene into stop action frames for careful analysis.	50
Setup	You can change the default settings to customize performance to your preference.	56
Preview	You can display thumbnail views of the first scenes of titles or chapters and select a preferred one.	50
Capture	You can sample a scene from a playback picture and transform it into a background picture.	51
Angle Viewer	You can display all camera angles simultaneously and select your preferred one from them.	51
Picture Setting	You can fine adjust picture quality and store up to 3 custom picture settings in the memory of the DVD player.	52
E.A.M.	You can easily switch a preferred audio enhancement.	39
V-Remote	You can control key playback functions using the graphics based on-screen remote control.	46
Display	You can view information about a disc and its operational status on the TV screen.	53
Closed Caption	You can display closed caption included on a DVD disc without connecting a closed caption decoder to your TV.	53

Accessing Features - NAVI - (continued)

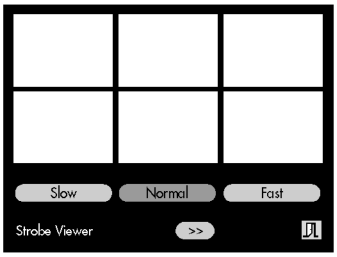
NAVI menu items

Strobe Viewer

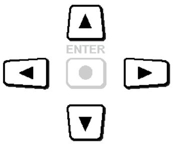
You can divide a desired scene into stop action frames for careful analysis.

After selecting this icon and pressing ENTER, the following on-screen display appears:

e.g.



1 Press ▲ / ▼ / ◄ / ► to select.



Slow: Still pictures at shorter intervals.
Normal: Still pictures at normal intervals.
Fast: Still pictures at longer intervals.
>>: To view the next series of 6 pictures.
Л : To quit the on-screen display.

2 Press **ENTER**.

Note

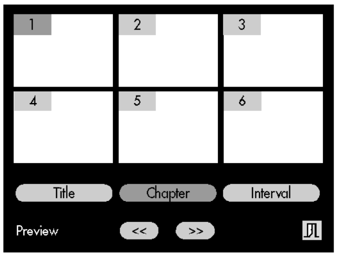
Some discs or scenes may not permit this operation.

Preview

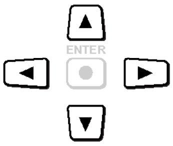
You can display thumbnail views of the first scenes of titles or chapters and select a preferred one.

After selecting this icon and pressing ENTER, the following on-screen display appears:

e.g.



1 Press ▲ / ▼ / ◄ / ► to select.



1 - 6: To locate the scene.
Title: To display the first scenes of titles (1 to 6).
Chapter: To display the first scenes of chapters (1 to 6).
Interval: To display scenes at intervals of about 10 minutes apart.
<< : To go to the previous page.
>> : To go to the next page.
Л : To quit the on-screen display.

2 Press **ENTER**.

Notes

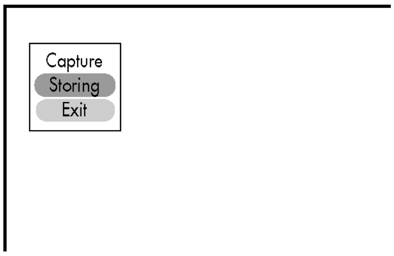
- Some discs or scenes may not permit this operation.
- Some items may not be selected depending on the disc or scene.
- Some of the first scenes may not picked up depending on the disc.

Capture

You can sample a scene from a playback picture and transform it into a background picture.

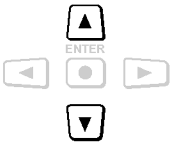
After selecting this icon and pressing ENTER, the following on-screen display appears:

e.g.



1 Pause playback at a scene you want to capture.

2 Press ▲ / ▼ to select.



Storing: To sample and store the current picture in the player memory.
Exit: To quit the on-screen display.

3 Press **ENTER**.

The stored picture will be displayed as a background picture when the player is in the stop mode. It is necessary to confirm this process via the setup menu 62〉.

Notes

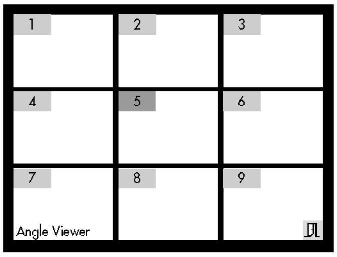
- You can store only one picture. Storing a new picture will erase the old one.
- No operations are permitted in process of sampling and storage of background picture.

Angle Viewer

You can display all camera angles simultaneously and select your preferred one from them.

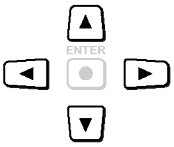
After selecting this icon and pressing ENTER, the following on-screen display appears:

e.g.



When the scene contains 9 camera angles:

1 Press ▲ / ▼ / ◀ / ▶ to select.



1-9 : To select the camera angle.
🚪 : To quit the on-screen display.

2 Press **ENTER**.

Note

Some discs or scenes may not permit this operation.

Accessing Features - NAVI - (continued)

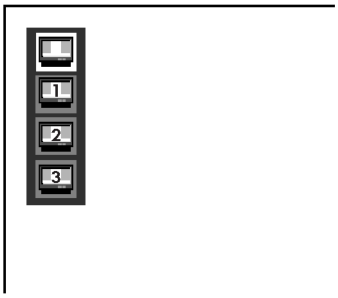
NAVI menu items

Picture Setting

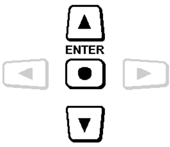
You can fine adjust picture quality and store up to 3 custom picture settings in the memory of the DVD player.

After selecting this icon and pressing ENTER, the following on-screen display appears:

e.g.



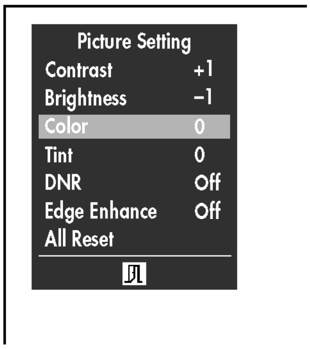
1 Press ▲ / ▼ to select, and press **ENTER**.



(Standard) : Normal setting.
1, 2, 3: Select the desired custom memory number. (Follow steps 2 to 4 below.)

2 Press ▲ / ▼ to select the element.

e.g. When you select “Color”:

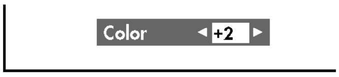


Picture Setting	
Contrast	+1
Brightness	–1
Color	0
Tint	0
DNR	Off
Edge Enhance	Off
All Reset	

3 Press **ENTER**.
The sub menu appears.

4 Press ◀ / ▶ to adjust the value, and press **ENTER**.

e.g.



Color ◀ +2 ▶

Contrast :	-7 (Lower)	to	+7 (Higher)
Brightness :	-7 (Darker)	to	+7 (Brighter)
Color:	-7 (Duller)	to	+7 (Brighter)
Tint :	-7 (Redder)	to	+7 (Greener)
DNR*[1] :	On / Off		
Edge Enhance*[2] :	On / Off		
All Reset :	To restore all the elements to the normal setting. A message will appear. Follow the procedure displayed on-screen.		

*[1]: DNR: Digital Noise Reduction.
To view a picture with less video noise.

Notes
- Actual picture enhancement may vary depending on the quality of the disc.
- While the DNR feature can provide additional improvement in the reduction of noise in the video signal, it may produce undesirable picture artifacts on some discs.
- Depending on the disc, some kinds of picture details may be lost by the picture enhancement.

*[2]: To enhance picture edges.

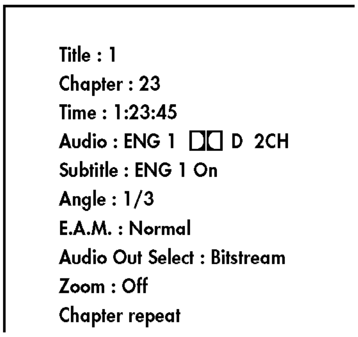
Note
The Tint adjustment is not available when connecting to a TV via the component video jacks (Y, PB, PR).

Display

You can view information about a disc and its operational status on the TV screen.

After selecting this icon and pressing ENTER, the following on-screen display appears:

e.g.



Title : 1
Chapter : 23
Time : 1:23:45
Audio : ENG 1 DD D 2CH
Subtitle : ENG 1 On
Angle : 1/3
E.A.M. : Normal
Audio Out Select : Bitstream
Zoom : Off
Chapter repeat

To quit the on-screen display, press **ENTER**.

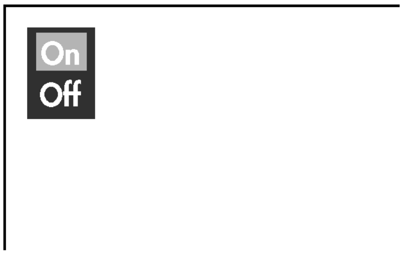
Note
Some discs or scenes may not permit this operation.

Closed Caption

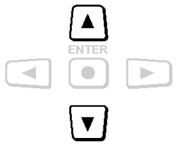
You can display closed caption included on a DVD disc without connecting a closed caption decoder to your TV.

After selecting this icon and pressing ENTER, the following on-screen display appears:

e.g.



1 Press ▲ / ▼ to select.



On : To display closed caption.
Off: To disable closed caption.

2 Press **ENTER**.

Notes
- While you are using on-screen displays (including the above one), you cannot view closed caption.
- When “On” is selected, some displays such as “▷” may be disabled.

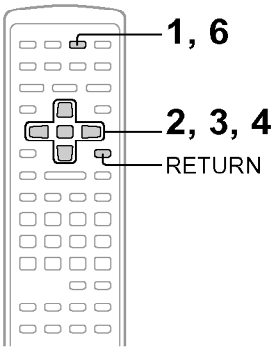
Function Setup

You can change the default settings to customize performance to your preference.

- Customizing the Function Settings
- Table of Languages

Customizing the Function Settings

You can change the default settings to customize performance to your preference.

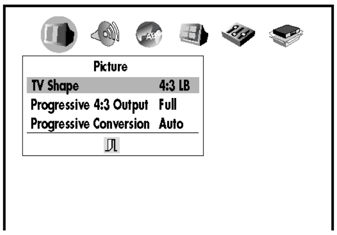


DVD-V VCD CD Setting procedure

1 Press SETUP during stop.

SETUP

The following on-screen display appears.



Picture
TV Shape 4:3 LB
Progressive 4:3 Output Full
Progressive Conversion Auto
⎍

2 Press ◀ / ▶ to select a symbol for the setting you want to change.

(See the next page.)

- Picture performance settings
- Output sound settings
- Language settings
- Display settings
- Operational settings
- Initializing

3 Press ▲ / ▼ to select the setting you want to change, then press ENTER.

4 Change the selection by ▲ / ▼ or other buttons, by referring to the corresponding pages 58, then press ENTER.

5 Repeat steps 3 and 4 to change other settings.

To select another operation, go back to step 2.

6 Press SETUP.

SETUP

The on-screen display disappears.

■ To return to the previous display

Press **RETURN**.

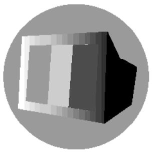
RETURN

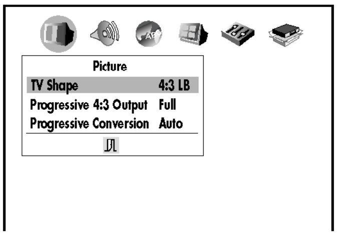
Notes

- The on-screen display disappears also when you select "⎍" and press the ENTER button.
- The SETUP button can function even during normal playback, however some operations may be inaccessible, and a message will appear. In this case, try again after playback is stopped.

Setting		Details	Page
TV Shape	DVD-V	To select a picture size according to the aspect ratio of your TV.	58
Progressive 4:3 Output	DVD-V VCD	To select the video output of pictures recorded in 4:3 format. (Only when connected to a PROGRESSIVE TV.)	58
Progressive Conversion	DVD-V	To select the system of output signal. (Only when connected to a PROGRESSIVE TV.)	58
PCM Down Sampling	DVD-V	To select a sound processing option according to performance of the connected equipment. (Only when the BITSTREAM/PCM (DIGITAL) AUDIO OUT jack is connected.)	59
Audio Out Select	DVD-V VCD CD	To select an output sound format corresponding to your system connection.	59
Dynamic Range Control	DVD-V	To turn on or off a function that makes faint sounds easier to hear even if you lower the volume during late hours playback.	59
Karaoke Vocal	DVD-V	To turn on or off the vocal output during DVD KARAOKE disc playback.	60
On-Screen Language	DVD-V VCD CD	To select a preferred language for on-screen displays.	60
Disc Menu Language	DVD-V	To select a preferred language for disc menus.	60
Audio Language	DVD-V	To select a preferred language for the sound track.	61
Subtitle Language	DVD-V	To select a preferred language for subtitles.	61
On-Screen Displays	DVD-V VCD CD	To turn on or de-activate the operational status display on the TV screen.	62
Background	DVD-V VCD CD	To select the background color or background picture.	62
Screen Saver	DVD-V	To turn the screen saver on or off.	62
Pause/Still	DVD-V	To select the resolution of still pictures. (Field/Frame)	62
Parental Lock	DVD-V	To turn the parental lock function on or off.	62
Remote Confirmation	DVD-V VCD CD	To turn on or off the confirmation beeper announcing when each remote command received.	64
Title Stop	DVD-V	To turn on or off a feature that automatically stops playback after a title has been viewed.	64
PBC	VCD	To use the menu screen when playing a PBC-controllable VIDEO CD.	64
Initialize	DVD-V VCD CD	To restore all settings to the factory set.	64

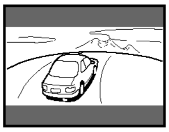
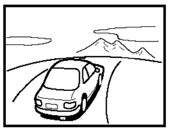
Setting details





TV Shape 4:3 LB
Progressive 4:3 Output Full
Progressive Conversion Auto

TV Shape DVD-V

4:3 Letterbox: 	Select when a standard 4:3 TV is connected. Displays theatrical images with masking bars above and below the picture.
4:3 Normal: 	Select when a standard 4:3 TV is connected. Displays pictures cropped to fill your TV screen. Either or both sides of the picture are cut off.
16:9 Widescreen:	Select when a 16:9 wide TV is connected.

Notes
- The displayable picture size is preset on the DVD video disc. Therefore, the playback picture of some DVD video discs may not conform to the picture size you select.
- When you play DVD video discs recorded in the 4:3 picture size only, the playback picture always appears in the 4:3 picture size regardless of the TV shape setting.
- If you select “16:9 Widescreen” and you own a 4:3 TV set, the DVD playback picture will be horizontally distorted during playback. Images will appear to be horizontally compressed. Always be sure that your TV shape conforms to the actual TV in use.

Progressive 4:3 Output DVD-V VCD

Select the video output of pictures recorded in 4:3 format. (Only when connected to a PROGRESSIVE TV.)

Full: Displays pictures expanded horizontally to fill the 16:9 screen.

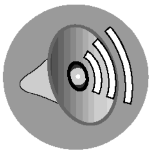
4:3: Displays images in 4:3 aspect ratio with masking bars to the left and right of the picture.

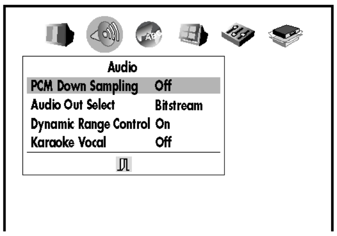
Progressive Conversion DVD-V

There are two types of source content in pictures recorded in DVD video discs: film content (pictures recorded from films at 24 frames per second) and video content (video signals recorded at 30 frames per second). Make this selection according to the type of content being viewed.

Auto: Select this position normally.
The DVD player automatically detects source content, film or video, of playback source, and converts that signal in the progressive output format in an appropriate method.
Video: The DVD player filters video signal, and converts it in the progressive output format appropriately.
Suitable for playback of video content pictures.
Film: The DVD player converts film content pictures in the progressive output format appropriately.
Suitable for playback of film content pictures.
The progressive output feature will be most effective under this selection.

Note
Depending on the disc, pictures may be cut off or doubled. In this case, select “Video.”





Audio	
PCM Down Sampling	Off
Audio Out Select	Bitstream
Dynamic Range Control	On
Karaoke Vocal	Off

PCM Down Sampling DVD-V

Make this selection only when you use your audio equipment (e.g. receiver) connecting to the DVD player via the BITSTREAM/PCM (DIGITAL) AUDIO OUT jack.

According to performance of your connected receiver, select a sound processing option for playback of a disc that contains high frequency signals (sampling frequency 96 kHz).

Off: Select when your connected receiver conforms to high frequency signals of 96 kHz.
The DVD player outputs these signals in a disc as they are.

On: Select when your connected receiver does not conform to high frequency signals of 96 kHz.
The DVD player outputs these signals in a disc depressing the frequencies to 48 kHz.

Notes

- Regardless of this setting, the DVD player outputs high frequency signals in a copyright protected disc, depressing to 48 kHz.
- If you select “Off” while your connected receiver does not conform to high frequency signals of 96 kHz, you cannot hear output sound of those signals.

Audio Out Select DVD-V VCD CD

Select the output sound format corresponding to your system connection.
For details of sound recording systems, see 43.

Bitstream: Select when connected to an amplifier equipped with a Dolby Digital, DTS, MPEG1 or MPEG2 decoder. 21 22
The DVD player outputs digital audio information in the bitstream format when you play a DVD video disc recorded on the Dolby Digital, DTS, MPEG1 or MPEG2 recording system.

PCM: Select when connected to a 2 channel digital stereo amplifier. 23
The DVD player outputs sounds in the PCM 2ch format when you play a DVD video disc recorded on the Dolby Digital, MPEG1 or MPEG2 recording system.

Note

When you make a connection to a TV, or Dolby Pro Logic or stereo system via the analog audio jacks, select “Bitstream” or “PCM.”

Dynamic Range Control DVD-V

Off: Full dynamic range is maintained.
On: Dynamic range is reduced.

Notes

- This function works only during playback of Dolby Digital recorded discs.
- The level of Dynamic Range Reduction may differ depending on the DVD disc.

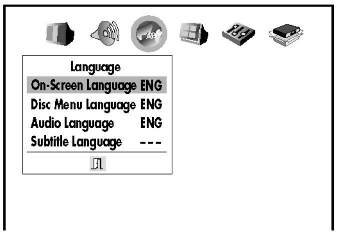
Setting details

Karaoke Vocal DVD-V

Off: The primary vocal is not output.
On: The primary vocal is output when it is recorded on the disc.

Notes

- The vocal output feature is used during playback of Dolby Digital (multi-channel) recorded DVD KARAOKE discs. This feature allows you to turn off vocal audio tracks, or restore them for background accompaniment.
- When playing KARAOKE, connect appropriate audio equipment such as an amplifier to the DVD player.



Language
On-Screen Language ENG
Disc Menu Language ENG
Audio Language ENG
Subtitle Language ---

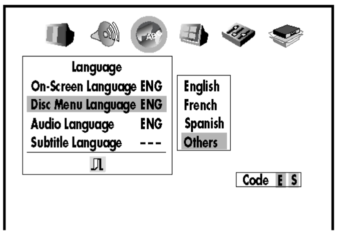
On-Screen Language DVD-V VCD CD

English: To view on-screen displays in English.
Français: To view on-screen displays in French.
Español: To view on-screen displays in Spanish.

Disc Menu Language DVD-V

English: To display disc menus in English.
French: To display disc menus in French.
Spanish: To display disc menus in Spanish.
Others: To make a further choice.
After pressing the ENTER button, follow steps 1) - 4) below.

1) Obtain the abbreviation of the preferred language from the list 65.
2) Select the first character by pressing the ▲ / ▼ buttons.
3) Press the ◄ / ► buttons to shift and select the second character by pressing the ▲ / ▼ buttons.



Language
On-Screen Language ENG
Disc Menu Language ENG
Audio Language ENG
Subtitle Language ---

English
French
Spanish
Others

Code E S

4) Press the ENTER button.

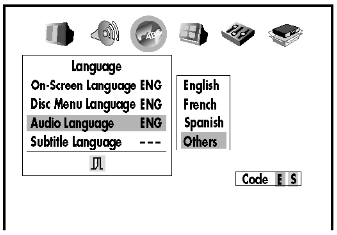
Note

Some DVD video discs may not include your pre-selected language. In this case, the DVD player automatically displays disc menus consistent with the disc's initial language setting.

Audio Language DVD-V

English: To play sound tracks in English.
French: To play sound tracks in French.
Spanish: To play sound tracks in Spanish.
Others: To make a further choice.
After pressing the ENTER button, follow steps 1) - 4) below.

1) Obtain the abbreviation of the preferred language from the list 65.
2) Select the first character by pressing the ▲ / ▼ buttons.
3) Press the ◄ / ► buttons to shift and select the second character by pressing the ▲ / ▼ buttons.



Language
On-Screen Language ENG
Disc Menu Language ENG
Audio Language ENG
Subtitle Language ---

English
French
Spanish
Others

Code E S

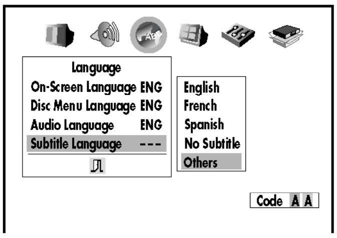
4) Press the ENTER button.

Note
Some DVD video discs may be played in a different language than you selected. A prior language may be programmed on the disc.

Subtitle Language DVD-V

English: To display subtitles in English.
French: To display subtitles in French.
Spanish: To display subtitles in Spanish.
No Subtitle: To disable subtitles.
Others: To make a further choice.
After pressing the ENTER button, follow steps 1) - 4) below.

1) Obtain the abbreviation of the preferred language from the list 65.
2) Select the first character by pressing the ▲ / ▼ buttons.
3) Press the ◄ / ► buttons to shift and select the second character by pressing the ▲ / ▼ buttons.



Language
On-Screen Language ENG
Disc Menu Language ENG
Audio Language ENG
Subtitle Language ---

English
French
Spanish
No Subtitle
Others

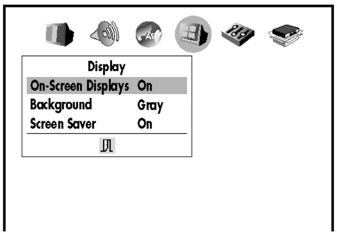
Code A A

4) Press the ENTER button.

Notes
- Some DVD video discs may be set to display subtitles in a different language than you selected. A prior subtitle language may be programmed on the disc.
- Some DVD video discs allow you to change subtitle selections only via the disc menu. If this is the case, press the MENU button and choose the appropriate subtitle language from the selection on the disc menu.

Customizing the Function Settings (continued)

Setting details



Display
On-Screen Displays On
Background Gray
Screen Saver On

On-Screen Displays DVD-V VCD CD

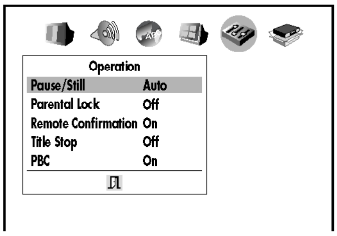
Off: Operational modes (e.g. "❚❚", " ▷▷ ") are not displayed.
On: Operational modes (e.g. "❚❚", " ▷▷ ") are displayed on-screen.

Background DVD-V VCD CD

Blue:	Blue background.
Gray:	Gray background.
Capture:	To use a picture you sampled and stored in the memory using the Capture feature 51 as a background.
Jacket:	To use the jacket picture included on some discs as a background. If it is not included, a gray background will be substituted.

Screen Saver DVD-V

Off: The screen saver is disengaged.
On: The screen saver operates.



Operation
Pause/Still Auto
Parental Lock Off
Remote Confirmation On
Title Stop Off
PBC On

Pause/Still DVD-V

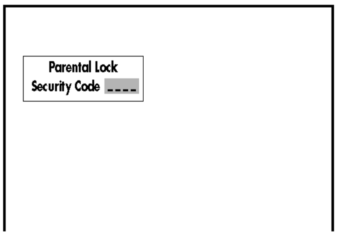
Auto:	For normal use. Still and fast motion images can be paused.
Frame:	The resolution of still pictures is improved, so that you can make a motionless picture more clearer when you pause it.

Parental Lock DVD-V

DVD video discs equipped with the parental lock function are rated according to their content. The contents allowed by a parental lock level and the way a DVD video disc can be controlled may vary from disc to disc. For example, if the disc allowed you could edit out violent scenes unsuitable for children and replace them with more suitable scenes, or lock out playback of the disc altogether.

- DVD video discs may or may not respond to the parental lock settings. This is not a defect in the DVD player. Make sure this function works with your DVD video discs.

Off: The parental lock feature does not function. After pressing the ENTER button, follow step 1) below.
On: To activate the parental lock feature or change the settings. After pressing the ENTER button, follow steps 1) - 3) below.



Parental Lock
Security Code ----

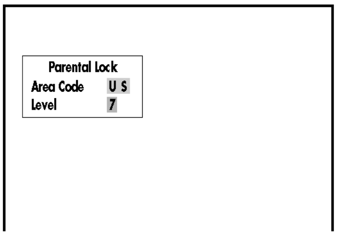
1) Press the number buttons to create a personal 4-digit security code, then press the ENTER button.
If you make a mistake before pressing the ENTER button, press the CLEAR button and enter your 4-digit security code again.

2) Enter the code of a country/area whose standards were used to rate the DVD video disc, referring to the list below.

Country/Area	Code
AUSTRALIA	AU
BELGIUM	BE
CANADA	CA
CHINA	CN
CHINA HONG KONG	HK
DENMARK	DK
FINLAND	FI
FRANCE	FR
GERMANY	DE
INDONESIA	ID
ITALY	IT
JAPAN	JP
MALAYSIA	MY
NETHERLANDS	NL
NORWAY	NO
PHILIPPINES	PH
RUSSIAN FEDERATION	RU
SINGAPORE	SG
SPAIN	ES
SWEDEN	SE
SWITZERLAND	CH
TAIWAN	TW
THAILAND	TH
UNITED KINGDOM	GB
UNITED STATES	US

a) Select the first character by pressing the ▲ / ▼ buttons.
b) Press the ◀ / ▶ buttons to shift and select the second character by pressing the ▲ / ▼ buttons.
c) Press the ENTER button.

3) Press the ▲ / ▼ buttons to select the parental lock level, then press the ENTER button.



Parental Lock
Area Code US
Level 7

You cannot play DVD video discs rated higher than the level you selected unless you cancel the parental lock function.
For example, when you select level 7, discs rated higher than level 7 are locked out and cannot be played.

The parental lock level is equivalent to the following USA movie ratings.
Level 7: NC-17
Level 6: R
Level 4: PG 13
Level 3: PG
Level 1: G

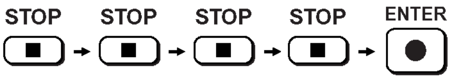
The parental lock levels for other countries/areas than U.S. are included for future use. Check the appropriate parental lock level when you buy a DVD video disc equipped with the parental lock feature in the future.

■ To change the parental lock level

Follow steps 1) - 3).

■ To change your 4-digit security code

1) After selecting “On” or “Off,” press the STOP button four times, then press the ENTER button.



The 4-digit security code is cleared.
2) Press the number buttons to create a new 4-digit security code.
3) Press the ENTER button.

Note
After making the “Parental Lock” setting, the on-screen display will disappear. To make other settings, press the SETUP button again to display them.

Customizing the Function Settings (continued)

Setting details

Remote Confirmation DVD-V VCD CD

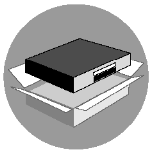
Off: The beeper does not sound.
On: The beeper sounds with each remote operation.

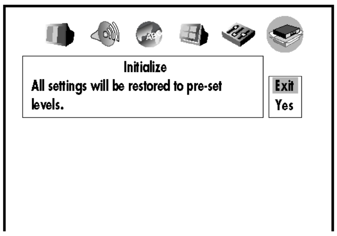
Title Stop DVD-V

Off: The DVD player continues after playback of a title is completed.
On: The DVD player stops after playback of a title is completed.

PBC VCD

Off: When playing a VIDEO CD without using the menu.
On: To use the menu when playing a PBC-featured VIDEO CD.



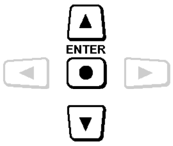


Initialize
All settings will be restored to pre-set levels.

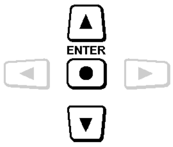
Initialize DVD-V VCD CD

To restore all settings to the factory set.

1) Press the ▲ / ▼ buttons to select "Yes," and press the **ENTER** button.



2) Read the message, and if you really want to restore all settings, press the ▲ / ▼ buttons to select "Yes," and press the **ENTER** button.



The message of completion appears.

Note
The "Parental Lock" setting is not restored to the factory set.

Table of Languages

Table of languages and their abbreviations

Abbreviation	Language
– – –	No alternate language
CHI (ZH)	Chinese
DUT (NL)	Dutch
ENG (EN)	English
FRE (FR)	French
GER (DE)	German
ITA (IT)	Italian
JPN (JA)	Japanese
KOR (KO)	Korean
MAY (MS)	Malay
SPA (ES)	Spanish
AA	Afar
AB	Abkhazian
AF	Afrikaans
AM	Amharic
AR	Arabic
AS	Assamese
AY	Aymara
AZ	Azerbaijani
BA	Bashkir
BE	Belorussian
BG	Bulgarian
BH	Bihari
BI	Bislama
BN	Bengali, Bangla
BO	Tibetan
BR	Breton
CA	Catalan
CO	Corsican
CS	Czech
CY	Welsh
DA	Danish
DZ	Bhutani
EL	Greek
EO	Esperanto
ET	Estonian
EU	Basque
FA	Persian
FI	Finnish
FJ	Fiji
FO	Faroese
FY	Frisian
GA	Irish
GD	Scottish Gaelic
GL	Galician
GN	Guarani
GU	Gujarati
HA	Hausa
HI	Hindi
HR	Croatian
HU	Hungarian
HY	Armenian
IA	Interlingua
IE	Interlingue
IK	Inupiak
IN	Indonesian
IS	Icelandic
IW	Hebrew
JI	Yiddish
JW	Javanese
KA	Georgian
KK	Kazakh
KL	Greenlandic
KM	Cambodian
KN	Kannada
KS	Kashmiri
KU	Kurdish
KY	Kirghiz
LA	Latin
LN	Lingala
LO	Laotian
LT	Lithuanian
LV	Latvian, Lettish
MG	Malagasy
MI	Maori
MK	Macedonian
ML	Malayalam
MN	Mongolian
MO	Moldavian
MR	Marathi
MT	Maltese
MY	Burmese
NA	Nauru
NE	Nepali
NO	Norwegian
OC	Occitan
OM	(Afan) Oromo
OR	Oriya
PA	Panjabi
PL	Polish
PS	Pashto, Pushto
PT	Portuguese
QU	Quechua
RM	Rhaeto-Romance
RN	Kirundi
RO	Rumanian
RU	Russian
RW	Kinyarwanda
SA	Sanskrit
SD	Sindhi
SG	Sango
SH	Serbo-Croatian
SI	Singhalese
SK	Slovak
SL	Slovenian
SM	Samoan
SN	Shona
SO	Somali
SQ	Albanian
SR	Serbian
SS	Siswati
ST	Sesotho
SU	Sundanese
SV	Swedish
SW	Swahili
TA	Tamil
TE	Telugu
TG	Tajik
TH	Thai
TI	Tigrinya
TK	Turkmen
TL	Tagalog
TN	Setswana
TO	Tongan
TR	Turkish
TS	Tsonga
TT	Tatar
TW	Twi
UK	Ukrainian
UR	Urdu
UZ	Uzbek
VI	Vietnamese
VO	Volapük
WO	Wolof
XH	Xhosa
YO	Yoruba
ZU	Zulu

Others

- Before Calling Service Personnel
- Specifications
- LIMITED WARRANTY DVD PLAYER

Before Calling Service Personnel

Check the following guide for the possible cause of a problem before contacting service.

Symptoms and correction

Symptom	Cause	Correction	Page
No power.	• The power plug is disconnected.	• Connect the power plug securely into the wall outlet.	**18**
The DVD player turned off by itself.	• The automatic power off function turned the unit off.	• Press the PLAY button.	**27**
No picture.	• The TV is not set to receive DVD signal output.	• Select the appropriate video input mode on the TV so the picture from the DVD player appears on the TV screen.	**26**
	• The video cable is not connected securely.	• Connect the video cable securely into the appropriate jacks.	**18, 19**
No sound.	• The equipment connected with the audio cable is not set to receive DVD signal output.	• Select the correct input mode of the audio receiver so you can listen to the sound from the DVD player.	**26**
	• The audio cable is not connected securely.	• Connect the audio cable securely into the appropriate jacks.	**18-23**
	• The audio receiver or TV is turned off.	• Turn on the equipment connected with the audio cable.	**26**
	• The setting of output sound format is incorrect.	• Select the proper audio setting.	**42, 56 59**
The playback picture has occasional distortion.	• The disc is dirty.	• Eject the disc and clean it.	**9**
	• It is in fast forward or fast reverse playback.	• Sometimes a small amount of picture distortion may appear. This is not a malfunction.	**–**
Brightness is unstable or noises are present in the playback pictures.	• The effect of copy protection.	• Connect the DVD player directly to the TV. Avoid connecting the DVD player to a VCR or TV/VCR combination.	**18**
The DVD player does not start playback.	• No disc is inserted.	• Insert a disc.	**26**
	• An unplayable disc is inserted.	• Insert a playable disc. (Check the disc type.)	**10**
	• The disc is placed upside down.	• Place the disc with the playback side down.	**26**
	• The disc is not placed within the guide.	• Place the disc correctly inside the guide on the disc tray.	**26**
	• The disc is dirty.	• Clean the disc.	**9**
	• The parental lock function is set.	• Cancel the parental lock function or change the parental lock level.	**56, 62**
Playback does not follow the course of the disc's program.	• It is in the mode of repeat playback, memory playback, etc.	• These operations may prevent a proper progress of the contents.	**–**
Buttons do not work.	• Power supply fluctuations or other abnormalities such as static electricity may interrupt correct operations.	• Turn the power on or off with the POWER button. Or disconnect the power plug and insert it into the wall outlet again.	**–**
The remote control does not work properly.	• The remote control is not pointed at the remote sensor of the DVD player.	• Point the remote control at the remote sensor of the DVD player.	**15**
	• The remote control is too far from the DVD player.	• Operate the remote control within about 7 m.	**15**
	• The batteries in the remote control are exhausted.	• Replace the batteries with new ones.	**15**

Specifications

DVD player / outputs / supplied accessories

DVD player

Power supply	120 V AC, 60 Hz
Power consumption	17 W
Mass	3.0 kg
External dimensions	430 × 81 × 311 mm (W/H/D)
Signal system	Standard NTSC
Laser	Semiconductor laser, wavelength 650 nm / 780 nm
Frequency range	DVD linear sound : 48 kHz sampling 4 Hz to 22 kHz 96 kHz sampling 4 Hz to 44 kHz
Signal-to-noise ratio	More than 112 dB
Audio dynamic range	More than 108 dB
Harmonic distortion	Less than 0.002 %
Wow and flutter	Below measurable level (less than ±0.001 % (W.PEAK))
Operating conditions	Temperature: 5 °C to 35 °C, Operation status: Horizontal

Outputs

Video output	1.0 V (p-p), 75 Ω, negative sync., pin jack × 1
S video output	(Y) 1.0 V (p-p), 75 Ω, negative sync., Mini DIN 4-pin × 1 (C) 0.286 V (p-p), 75 Ω
Component video output	(Y) 1.0 V (p-p), 75 Ω, negative sync., pin jack × 1 (P_B)/(P_R) 0.7 V (p-p), 75 Ω, pin jack × 2
Audio output (BITSTREAM/PCM OPTICAL)	Optical connector × 1
Audio output (BITSTREAM/PCM COAXIAL)	0.5 V (p-p), 75 Ω, pin jack × 1
Audio output (2CH AUDIO)	2.0 V (rms), 220 Ω, pin jacks (L, R) × 1

Supplied Accessories

Audio/video cable	1
Remote control (SE-R0058)	1
Batteries (AA)	2
Power cord	1

- Designs and specifications are subject to change without notice.

LIMITED WARRANTY DVD PLAYER

Toshiba America Consumer Products, Inc. (“TACP”), Toshiba Hawaii (“THI”) and Toshiba Canada Limited (“TCL”) make the following limited warranties. These limited warranties extend to original purchaser or any person receiving this set as a gift from the original purchaser and to no other purchaser or transferee.

Limited Ninety (90) Day Warranty

TACP/THI warrant this product against defects in materials or workmanship for a period of ninety (90) days after the date of original retail purchase. During this period, TACP/THI will repair or replace a defective product or part, at their option, with a new or refurbished product or part without charge to you. You must deliver the entire product to a TACP/THI Authorized Service Station. You are responsible for all transportation and insurance charges for the unit to and from the Authorized Service Station. If you live in the U.S.A. you may, at your option, return your DVD Unit to:

Toshiba America Consumer Products Inc.
Returns Center
1420C Toshiba Dr.
Lebanon, TN 37087

Upon receipt we will, at our option, exchange the DVD Unit with a new or refurbished unit. **Canadian consumers are requested to contact TCL. In Hawaii consumers are requested to contact THI.**

Limited One (1) Year Warranty

TACP/THI further warrant the parts in this product against defects in materials or workmanship for a period of one (1) year after the date of original retail purchase. During this period, TACP/THI will repair or replace a defective product or part, at their option, with a new or refurbished product or part without charge to you, except that if a defective part is replaced after ninety (90) days from the date of the original retail purchase you pay labor charges involved in the replacement. You must also deliver the entire product to a TACP/THI Authorized Service Station. You are responsible for all transportation and insurance charges for the unit to and from the Authorized Service Station. If you live in the U.S.A. you may, at your option, return your DVD Unit to:

Toshiba America Consumer Products Inc.
Returns Center
1420C Toshiba Dr.
Lebanon, TN 37087

Upon receipt we will, at our option, exchange the DVD Unit with a new or refurbished unit. **Canadian Consumers are requested to contact TCL. In Hawaii consumers are requested to contact THI.**

Rental Units

The warranty for rental units begin with the first rental or thirty (30) days from the date of shipment to the rental firm, whichever comes first.

Commercial Units

Products sold and used for commercial use have a limited ninety (90) day warranty for all parts and labor.

Owner’s Manual

You should read the owner’s manual thoroughly before operating this product. You should complete and mail the enclosed Demographic card within ten (10) days after you, or the person who has given you this product as a gift, purchased this product. This is one way to enable TACP to provide you with better customer service and improved products. Failure to return the card will not affect your rights under this warranty.

Your Responsibility

The above warranties are subject to the following conditions:

(1) You must retain your bill of sale or provide other proof of purchase.
(2) You must notify a TACP/THI/TCL /Authorized Service Station within thirty (30) days after you discover a defective product or part.
(3) All warranty servicing of this product must be made by a TACP/THI/TCL Authorized Service Station.
(4) U.S.A. warranties are effective only if the product is purchased and operated in the Continental U.S.A. or Puerto Rico.
(5) Labor service charges for set installation. Set up, adjustment of customer controls and installation or repair of antenna systems are not covered by this warranty. Reception problems caused by inadequate antenna systems are your responsibility.
(6) Warranties extend only to defects in materials or workmanship as limited above and do not extend to any product or parts which have been lost or discarded by you or to damage to products or parts caused by misuse, accident, damage caused by Acts of God, such as lighting or fluctuations in electric power, improper installation, improper maintenance or use in violation of instructions furnished by us; or to units which have been altered or modified without authorization of TACP/THI/TCL or to damage to products or part thereof which have had the serial number removed, altered, defaced or rendered illegible.
(7) Should you elect to return your DVD Unit to TACP after the ninety (90) days and within one (1) year, or after the warranty period has expired: Call (800)-631-3811 to receive information concerning an exchange price. Payment must be enclosed with product in the form of a certified check or money order including reason for return.
(8) Physically damaged DVD Units are not acceptable for repair or exchange whether in or out of warranty and will be returned as received.

How to Obtain Warranty Service

(1) Refer to the troubleshooting guide in your owner's manual. This check list may solve your problem.
(2) In the U.S.A., only call the TACP toll free number 800-631-3811, or if in Hawaii or Canada see listing below within (30) days after you find a defective product or part.
(3) Arrange for the delivery of the product to the TACP/THI/TCL Authorized Service Station or TACP Return Center. Products shipped to the Service Station must be insured and safely and securely packed, preferably in the original shipping carton, and a letter explaining the defect and also a copy of the bill of sale or other proof of purchase must be enclosed.

In the Continental United States contact:

Toll Free
800-631-3811

In Hawaii contact:
Toshiba Hawaii Inc.
327 Kamakee Street
Honolulu, HA 96814
(808)-521-5377

In Canada contact:
Consumer Electronics Group
191 McNabb Street
Markham, Ontario L3R 8H2
(905)-470-5400

Consumer Electronics Group
22171 Fraserwood Way
Richmond, B.C. V6W 1J5
(604)-303-2500

Consumer Electronics Group
1643 North Service Road
Droval, QC H9P 1J1
(514)-856-4100

All warranties implied by state law, including the implied warranties of merchantability and fitness for a particular purpose, are expressly limited to the duration of the limited warranties set forth above. With the exception of any warranties implied by state law as hereby limited, the foregoing warranty is exclusive and in lieu of all other warranties, guarantees, agreements and similar obligations of manufacturer or seller with respect to the repair or replacement of any parts. In no event shall TACP/THI be liable for consequential or incidental damages.

No person, agent, distributor, dealer or company is authorized to change, modify or extend the terms of these warranties in any manner whatsoever. The time within which an action must be commenced to enforce any obligation of TACP/THI arising under the warranty or under any statute, or law of the United States or any state thereof, is hereby limited to ninety (90) days from the date you discover or should have discovered, the defect. This limitation does not apply to implied warranties arising under state law.

This warranty gives you specific legal rights and you may also have other rights which may vary from state to state. Some states do not allow limitation on how long an implied warranty lasts, when an action may be brought, or the exclusion or limitation of incidental or consequential damages, so the above provisions may not apply to you.

ATTENTION CANADIAN CONSUMERS:
Canadian consumers are requested to complete the special Canadian "Warranty Registration Form" enclosed, and forward this completed form with a copy of bill of sale to TOSHIBA OF CANADA to "Register and Validate" their warranty. Product must be purchased from an Authorized Canadian Dealer. Products purchased in the U.S.A. and used in Canada are not covered by these warranties.

IMPORTANT: PACKING AND SHIPPING INSTRUCTION
When you send the product to a Service Station, you must use the original carton box and packing material, then insert the original carton box containing the unit into another carton using more packing material.

2. LOCATION OF MAIN PARTS AND MECHANISM PARTS

2-1. Location of Main Parts

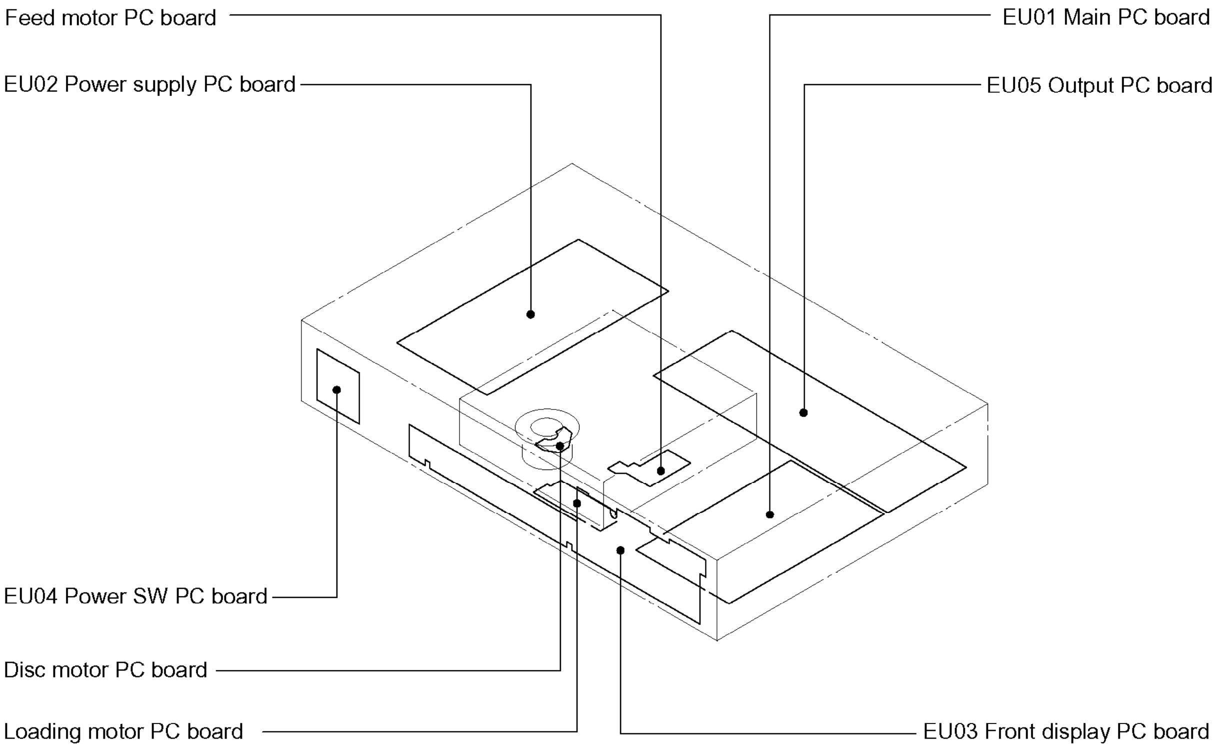

Feed motor PC board
EU02 Power supply PC board
EU01 Main PC board
EU05 Output PC board
EU04 Power SW PC board
Disc motor PC board
Loading motor PC board
EU03 Front display PC board

Fig. 1-2-1

2-2. Location of Mechanism Parts

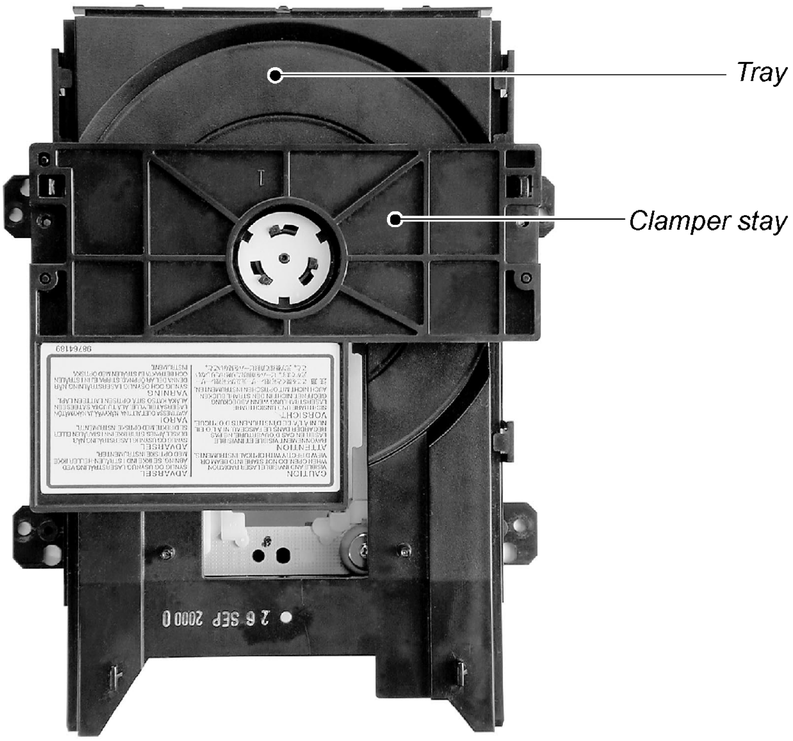

Tray
Clamper stay

Fig. 1-2-2 Mechanism chassis assembly (Top side)

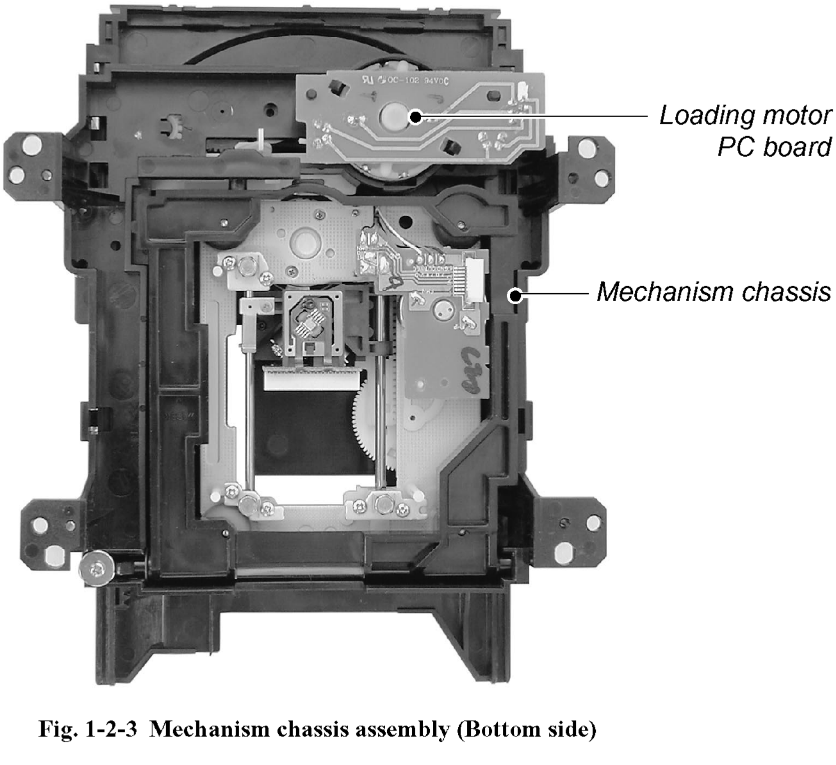

Loading motor PC board
Mechanism chassis

Fig. 1-2-3 Mechanism chassis assembly (Bottom side)

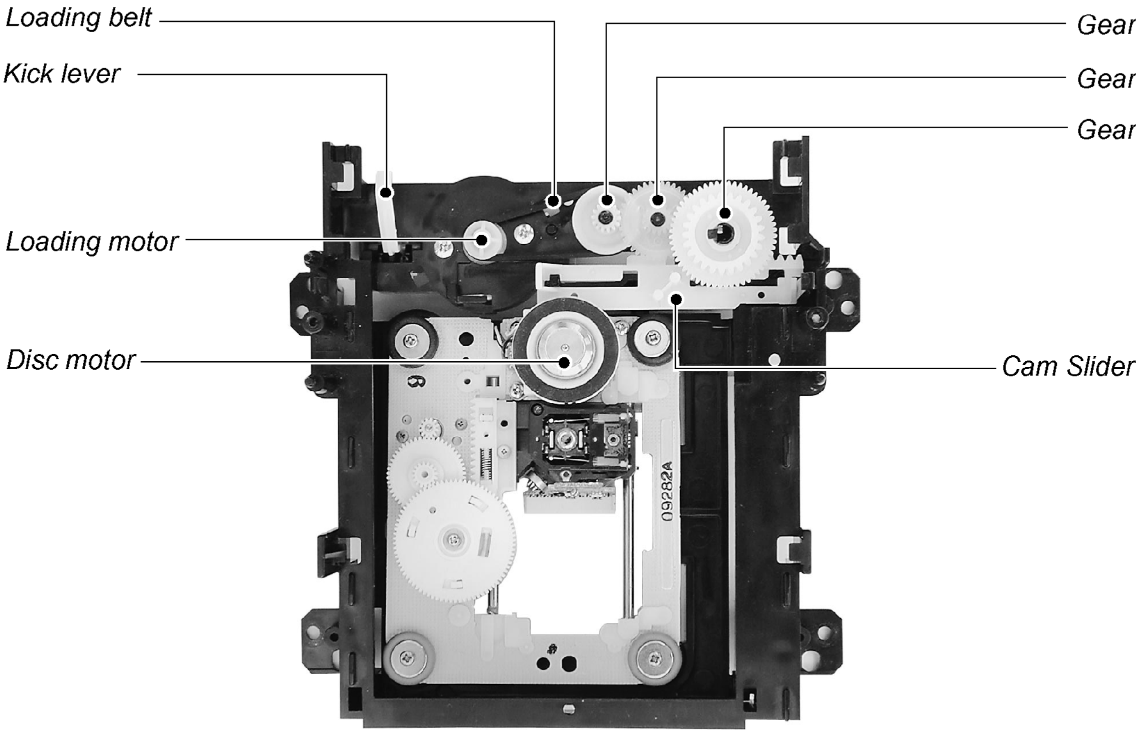

Loading belt
Kick lever
Loading motor
Disc motor
Gear
Gear
Gear
Cam Slider
09282A

Fig. 1-2-4 Mechanism chassis assembly (Internal side)

<Type A>

Note:

When servicing, note that this model has two types of the pickup mechanism assembly.

Only Type A is a service part. Type B can be changed to Type A pickup free from any performance problem.

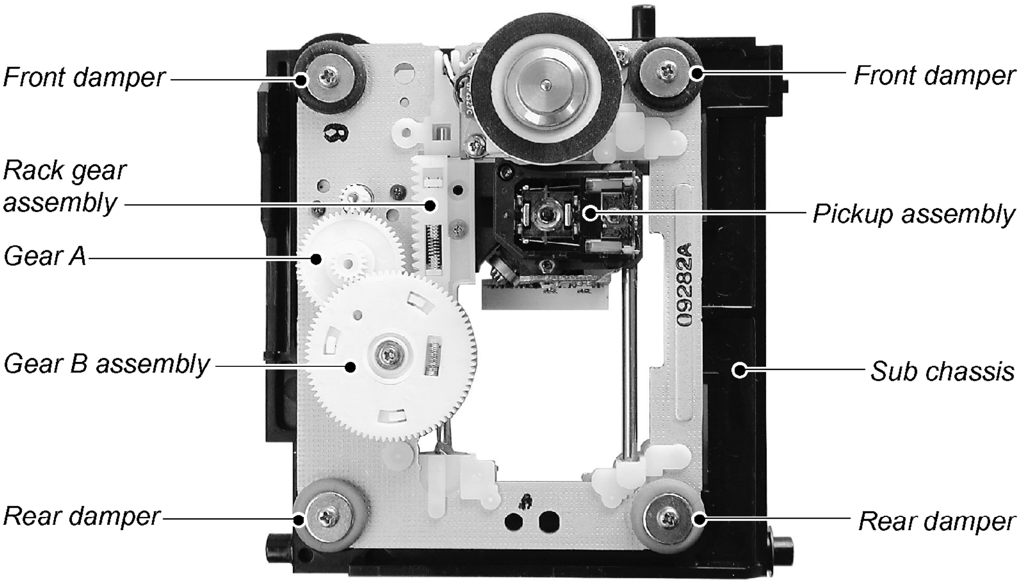

Front damper
Front damper
Rack gear assembly
Pickup assembly
Gear A
Gear B assembly
Sub chassis
Rear damper
Rear damper
09282A

Fig. 1-2-5 Pickup mechanism chassis assembly (Top side)

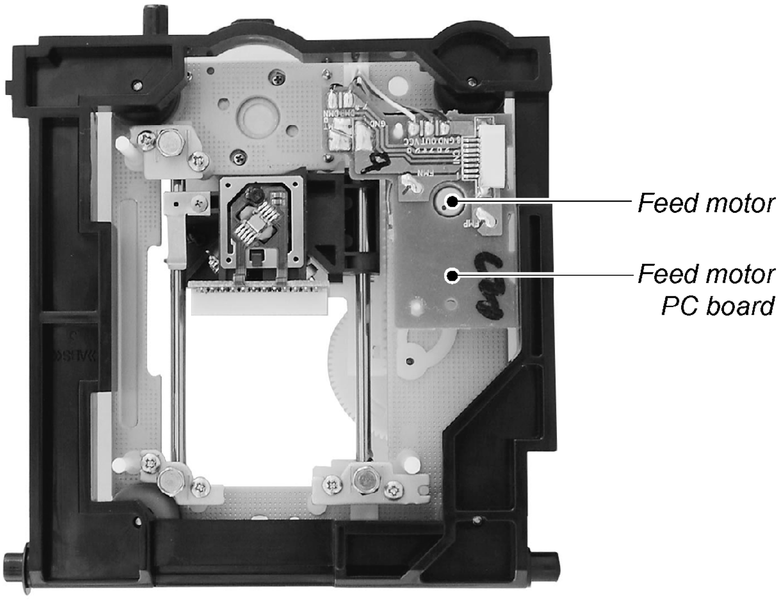

Feed motor
Feed motor PC board

Fig. 1-2-6 Pickup mechanism chassis assembly (Bottom side)

<Type B>

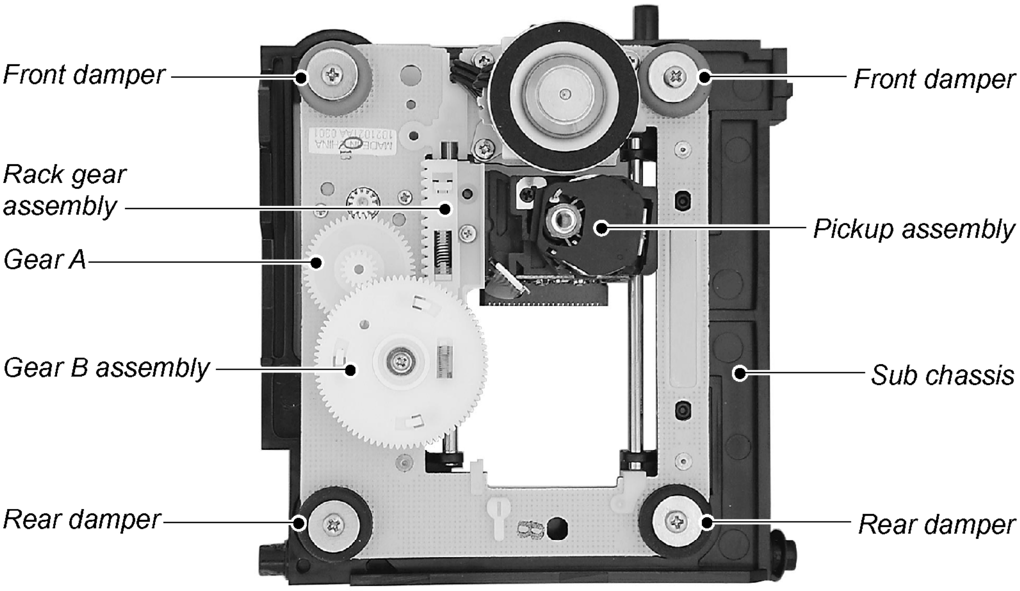

Front damper
Front damper
Rack gear assembly
Pickup assembly
Gear A
Gear B assembly
Sub chassis
Rear damper
Rear damper

Fig. 1-2-7 Pickup mechanism chassis assembly (Top side)

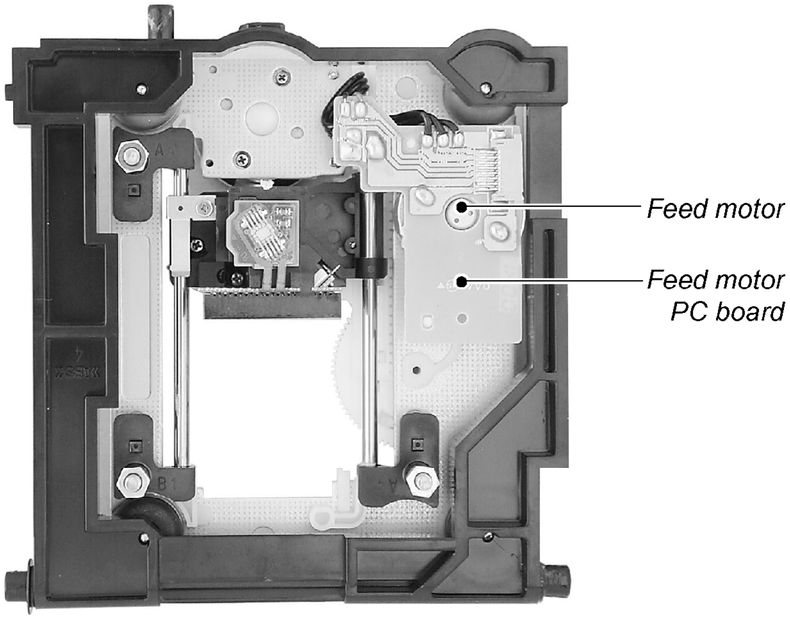

Feed motor
Feed motor PC board

Fig. 1-2-8 Pickup mechanism chassis assembly (Bottom side)

3. TROUBLESHOOTING

3-1. Main Circuit

3-1-1. Servo System

(1) Initial Operation after Power ON

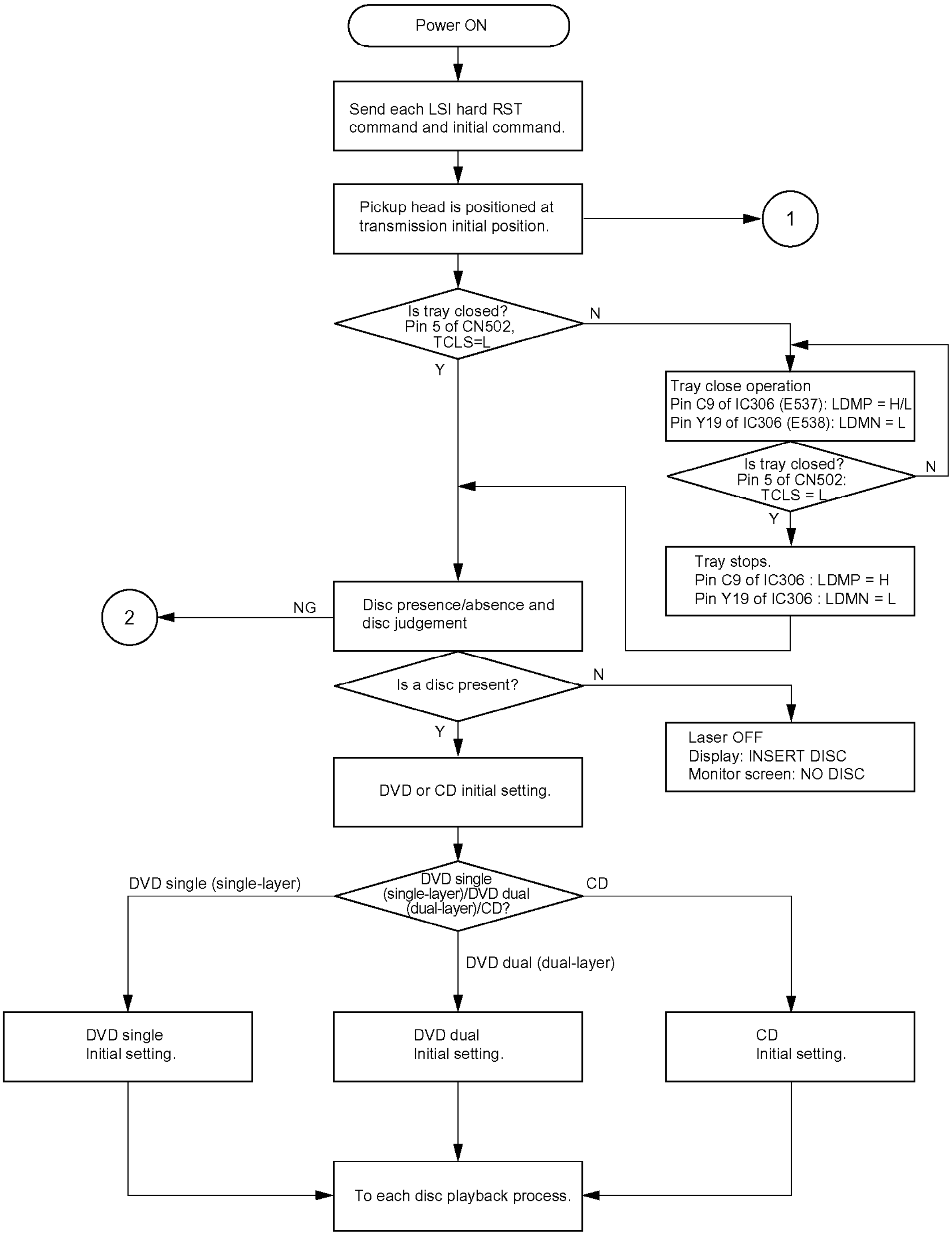
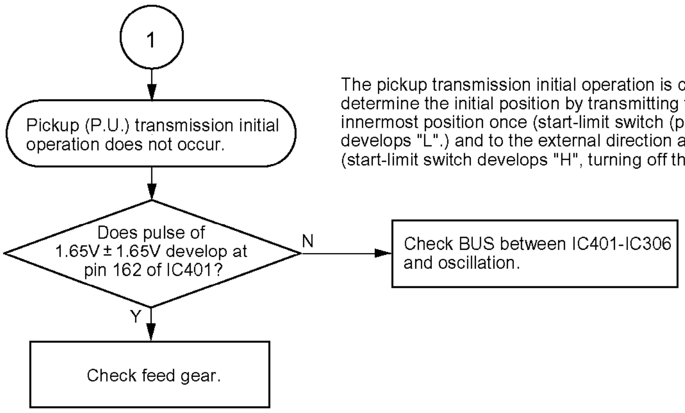

Power ON
Send each LSI hard RST command and initial command.
Pickup head is positioned at transmission initial position.
1
Is tray closed? Pin 5 of CN502, TCLS=L
N
Y
Tray close operation
Pin C9 of IC306 (E537): LDMP = H/L
Pin Y19 of IC306 (E538): LDMN = L
Is tray closed? Pin 5 of CN502: TCLS = L
N
Y
Tray stops.
Pin C9 of IC306 : LDMP = H
Pin Y19 of IC306 : LDMN = L
2
NG
Disc presence/absence and disc judgement
Is a disc present?
N
Y
Laser OFF
Display: INSERT DISC
Monitor screen: NO DISC
DVD or CD initial setting.
DVD single (single-layer)
DVD single (single-layer)/DVD dual (dual-layer)/CD?
CD
DVD dual (dual-layer)
DVD single Initial setting.
DVD dual Initial setting.
CD Initial setting.
To each disc playback process.

Fig. 1-3-1


1
Pickup (P.U.) transmission initial operation does not occur.
Does pulse of 1.65V ± 1.65V develop at pin 162 of IC401?
N
Check BUS between IC401-IC306 and oscillation.
Y
Check feed gear.

The pickup transmission initial operation is carried out to determine the initial position by transmitting the pickup to the innermost position once (start-limit switch (pin 4 of CN503) develops "L".) and to the external direction at low speed (start-limit switch develops "H", turning off the switch.).

Fig. 1-3-2

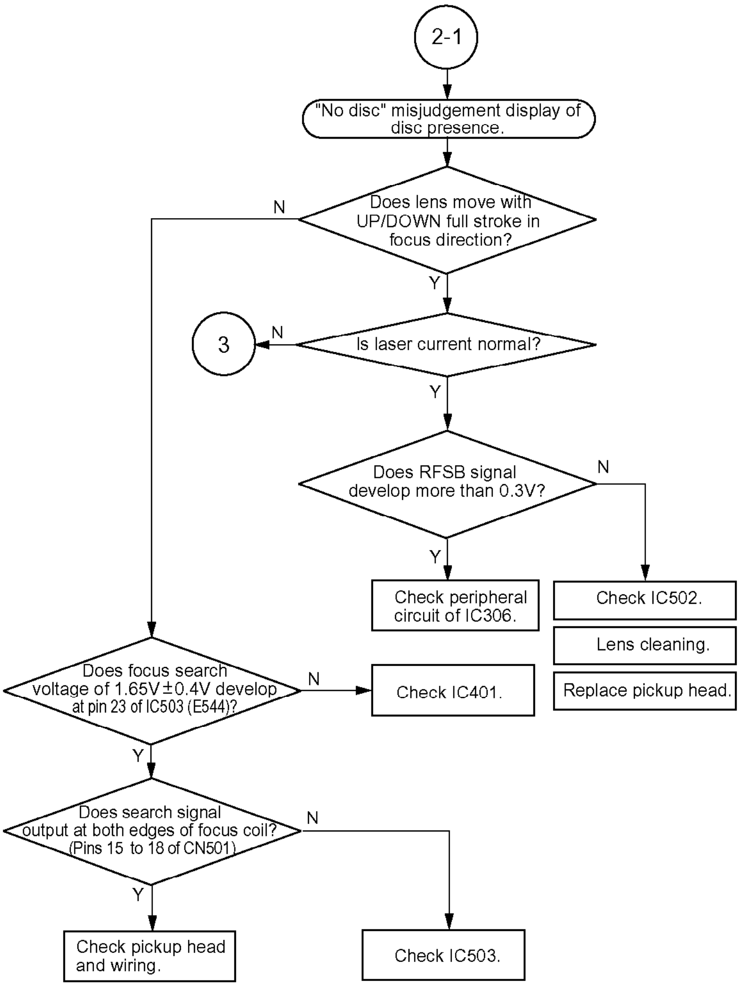

2-1
"No disc" misjudgement display of disc presence.
Does lens move with UP/DOWN full stroke in focus direction?
N
Y
Is laser current normal?
N
3
Y
Does RFSB signal develop more than 0.3V?
N
Y
Check peripheral circuit of IC306.
Check IC502.
Lens cleaning.
Replace pickup head.
Does focus search voltage of 1.65V±0.4V develop at pin 23 of IC503 (E544)?
N
Check IC401.
Y
Does search signal output at both edges of focus coil? (Pins 15 to 18 of CN501)
N
Y
Check pickup head and wiring.
Check IC503.

Fig. 1-3-3

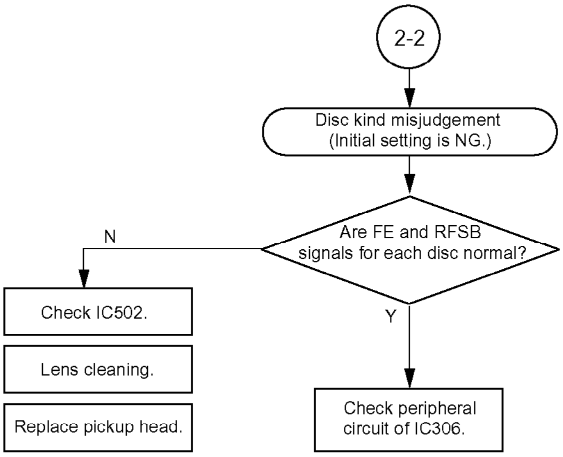
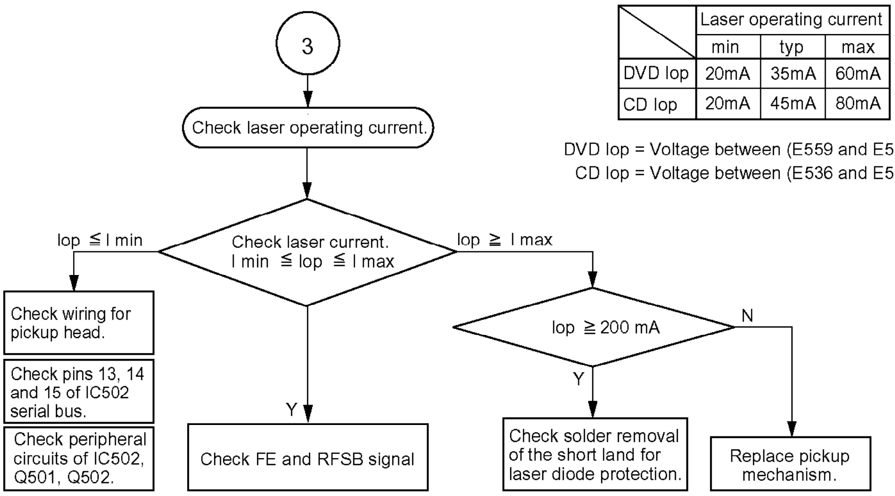

2-2
Disc kind misjudgement (Initial setting is NG.)
Are FE and RFSB signals for each disc normal?
N
Y
Check IC502.
Lens cleaning.
Replace pickup head.
Check peripheral circuit of IC306.

Fig. 1-3-4


3
Check laser operating current.
Check laser current. I min ≦ Iop ≦ I max
Iop ≦ I min
Iop ≧ I max
Y
Iop ≧ 200 mA
N
Y
Check wiring for pickup head.
Check pins 13, 14 and 15 of IC502 serial bus.
Check peripheral circuits of IC502, Q501, Q502.
Check FE and RFSB signal
Check solder removal of the short land for laser diode protection.
Replace pickup mechanism.

	Laser operating current		
	min	typ	max
DVD Iop	20mA	35mA	60mA
CD Iop	20mA	45mA	80mA

DVD Iop = Voltage between (E559 and E534) /10Ω
CD Iop = Voltage between (E536 and E534) /10Ω

To turn on each laser diode forcibly, press the following buttons on the remote controller.
DVD LD: ZOOM, 0, 3, 0, ZOOM
CD LD: ZOOM, 0, 3, 1, ZOOM
After checked the laser current, press POWER or OPEN/CLOSE button to turn it off.

CAUTION
- The laser ray emitting out from the pickup head is very harmful to your eyes.
  Keep your eyes from the objective lens at least 300mm distance during the pickup head operating.
- When you perform solder removal work, please turn OFF a set power supply and perform the ground of human body and a tool.

Fig. 1-3-5

DVD single (single-layer) disc detection waveform

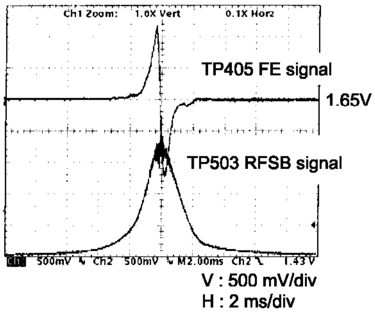


Fig. 1-3-6

DVD dual (dual-layer) disc detection waveform

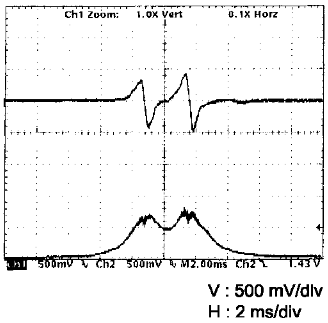


Fig. 1-3-7

CD disc detection waveform

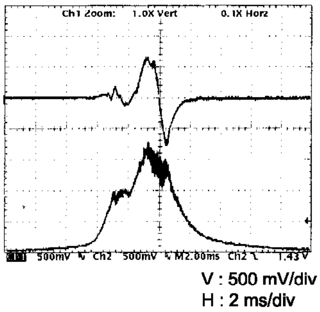


Fig. 1-3-8

(2) Picture appears (PLAY)

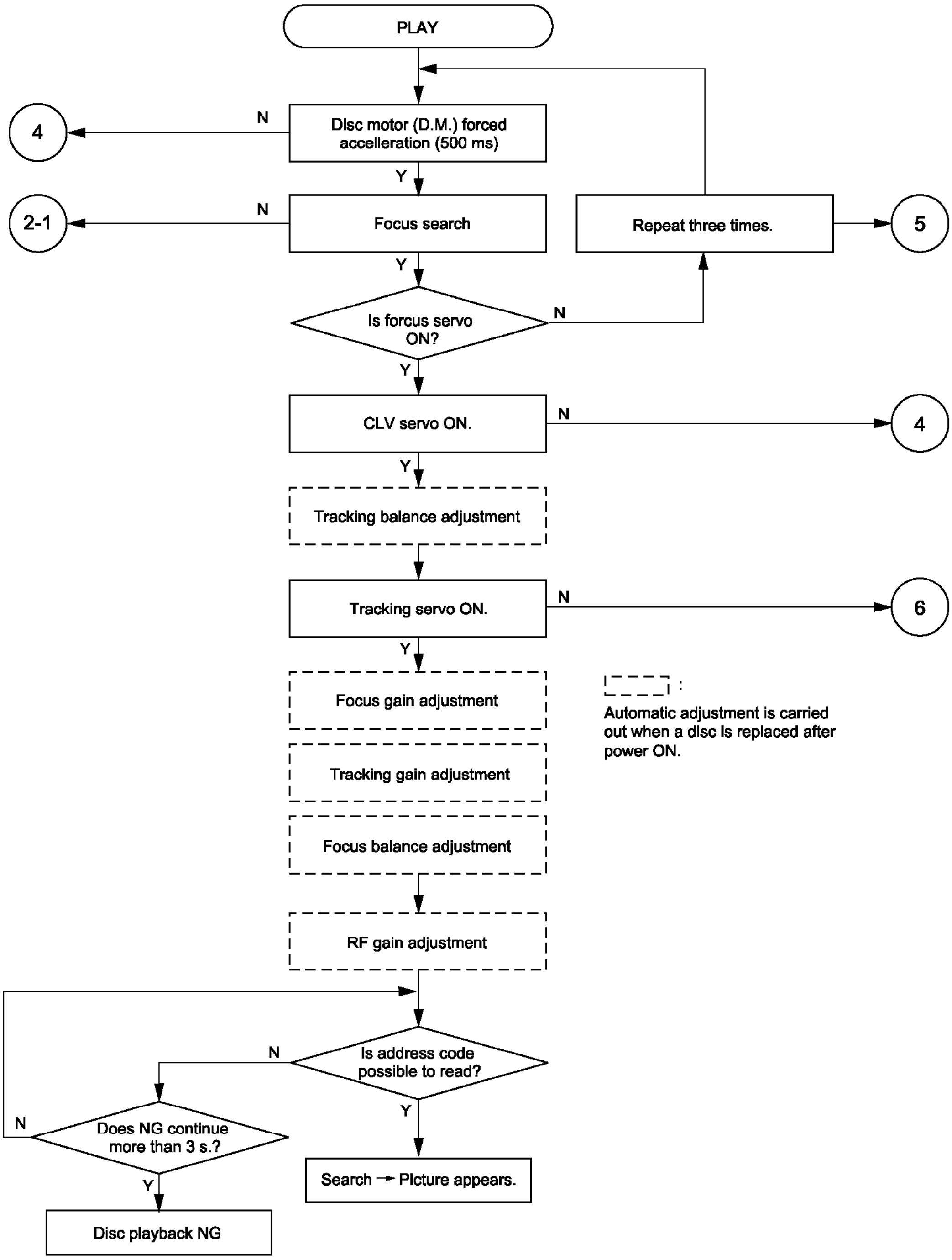

PLAY
Disc motor (D.M.) forced accelleration (500 ms)
N
4
Y
Focus search
N
2-1
Repeat three times.
5
Y
Is forcus servo ON?
N
Y
CLV servo ON.
N
4
Y
Tracking balance adjustment
Tracking servo ON.
N
6
Y
Focus gain adjustment
Tracking gain adjustment
Focus balance adjustment
RF gain adjustment
:
Automatic adjustment is carried out when a disc is replaced after power ON.
Is address code possible to read?
N
Y
Does NG continue more than 3 s.?
N
Y
Search → Picture appears.
Disc playback NG

Fig. 1-3-9

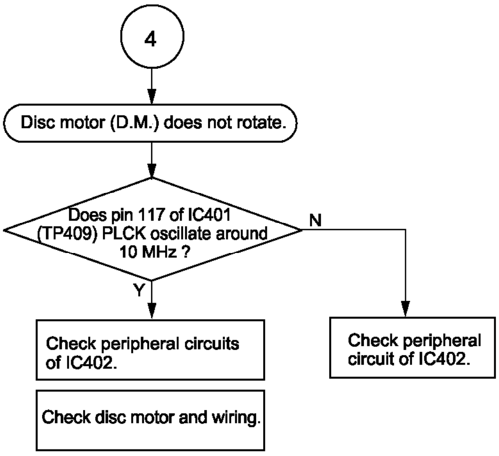

4
Disc motor (D.M.) does not rotate.
Does pin 117 of IC401 (TP409) PLCK oscillate around 10 MHz ?
N
Y
Check peripheral circuits of IC402.
Check disc motor and wiring.
Check peripheral circuit of IC402.

Fig. 1-3-10

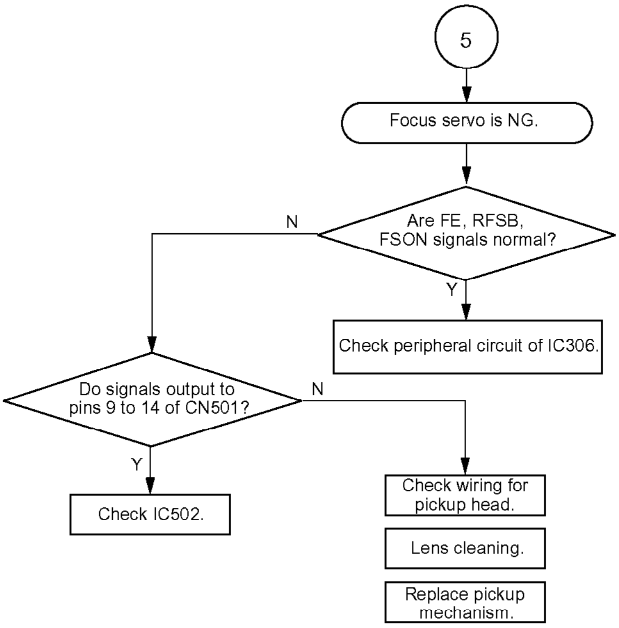

5
Focus servo is NG.
Are FE, RFSB, FSON signals normal?
N
Y
Check peripheral circuit of IC306.
Do signals output to pins 9 to 14 of CN501?
N
Y
Check IC502.
Check wiring for pickup head.
Lens cleaning.
Replace pickup mechanism.

Fig. 1-3-11

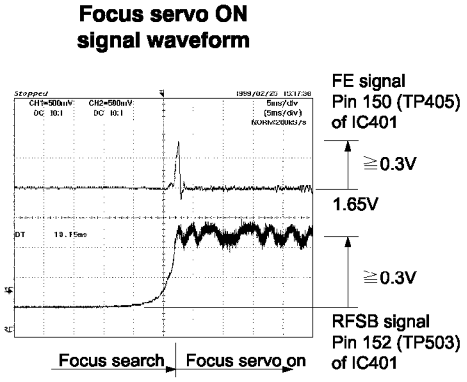

Focus servo ON signal waveform

Fig. 1-3-12

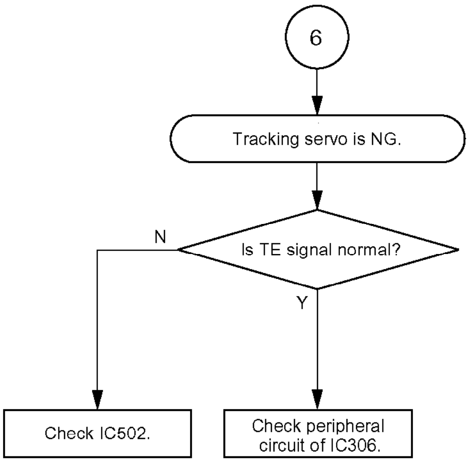
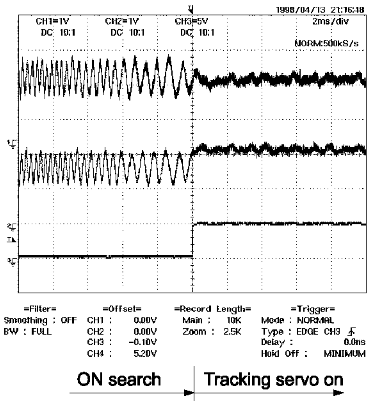

6
Tracking servo is NG.
Is TE signal normal?
N
Y
Check IC502.
Check peripheral circuit of IC306.

Fig. 1-3-13

Signal waveform at tracking servo ON (CD)



TE signal
Pin 151 (TP406) of IC401

1.65V

RFRP signal
Pin 153 (TP408) of IC401

Search ON (SRCH)
Pin 38 (TP411) of IC401

Fig. 1-3-14

Signal waveform at tracking servo ON (DVD)

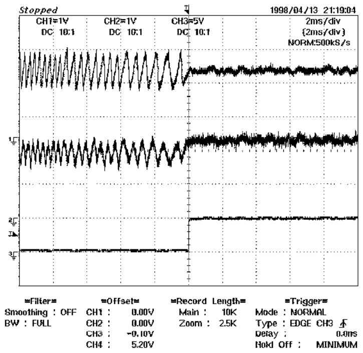


Fig. 1-3-15

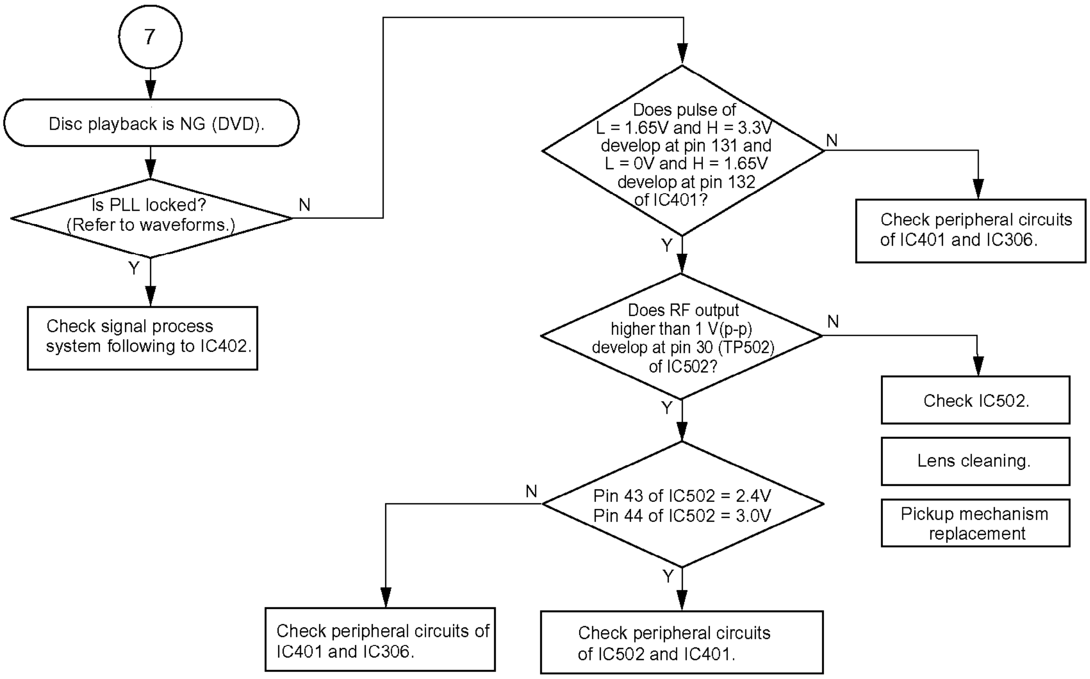
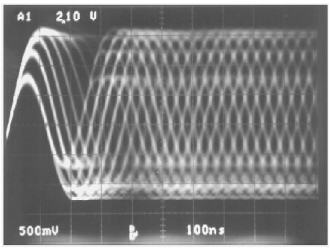

7
Disc playback is NG (DVD).
Is PLL locked?
(Refer to waveforms.)
N
Y
Check signal process system following to IC402.
Does pulse of L = 1.65V and H = 3.3V develop at pin 131 and L = 0V and H = 1.65V develop at pin 132 of IC401?
N
Check peripheral circuits of IC401 and IC306.
Y
Does RF output higher than 1 V(p-p) develop at pin 30 (TP502) of IC502?
N
Check IC502.
Lens cleaning.
Pickup mechanism replacement
Y
Pin 43 of IC502 = 2.4V
Pin 44 of IC502 = 3.0V
N
Check peripheral circuits of IC401 and IC306.
Y
Check peripheral circuits of IC502 and IC401.

Fig. 1-3-16

PLL works as a servo loop to generate a clock signal for reading RF signal binary data. With the PLL locked, the eye pattern is identified clearly when triggered with the read clock PLCK.

DVD RF signal

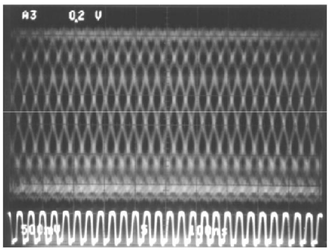


DVD RF signal
Pin 30 (TP502) of IC502

V : 500 mV/div
H : 50 ns/div

Fig. 1-3-17

DVD playback waveform



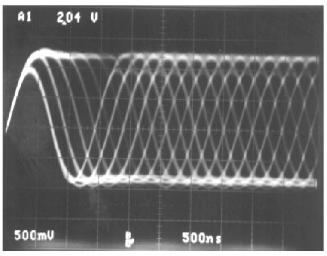
DVD RF signal
Pin 30 (TP502) of IC502

DVD PLCK
Pin 117 (TP409) of IC401

CH1 : TP502 DVDRF 500 mV/div
CH2 : TP409 DVDPLCK 5 V/div
50 ns/div

Fig. 1-3-19

CD RF signal

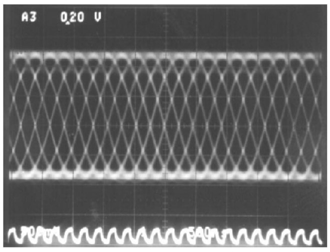


CD RF signal
Pin 30 (TP502) of IC502

V : 500 mV/div
H : 100 ns/div

Fig. 1-3-18

CD playback waveform



CD RF signal
Pin 30 (TP502) of IC502

CD PLCK
Pin 117 (TP409) of IC401

CH1 : TP502 CDRF 500 mV/div
CH2 : TP409 CDPLCK 5 V/div
100 ns/div

Fig. 1-3-20

3-1-2. Location Diagram of Servo Test Point

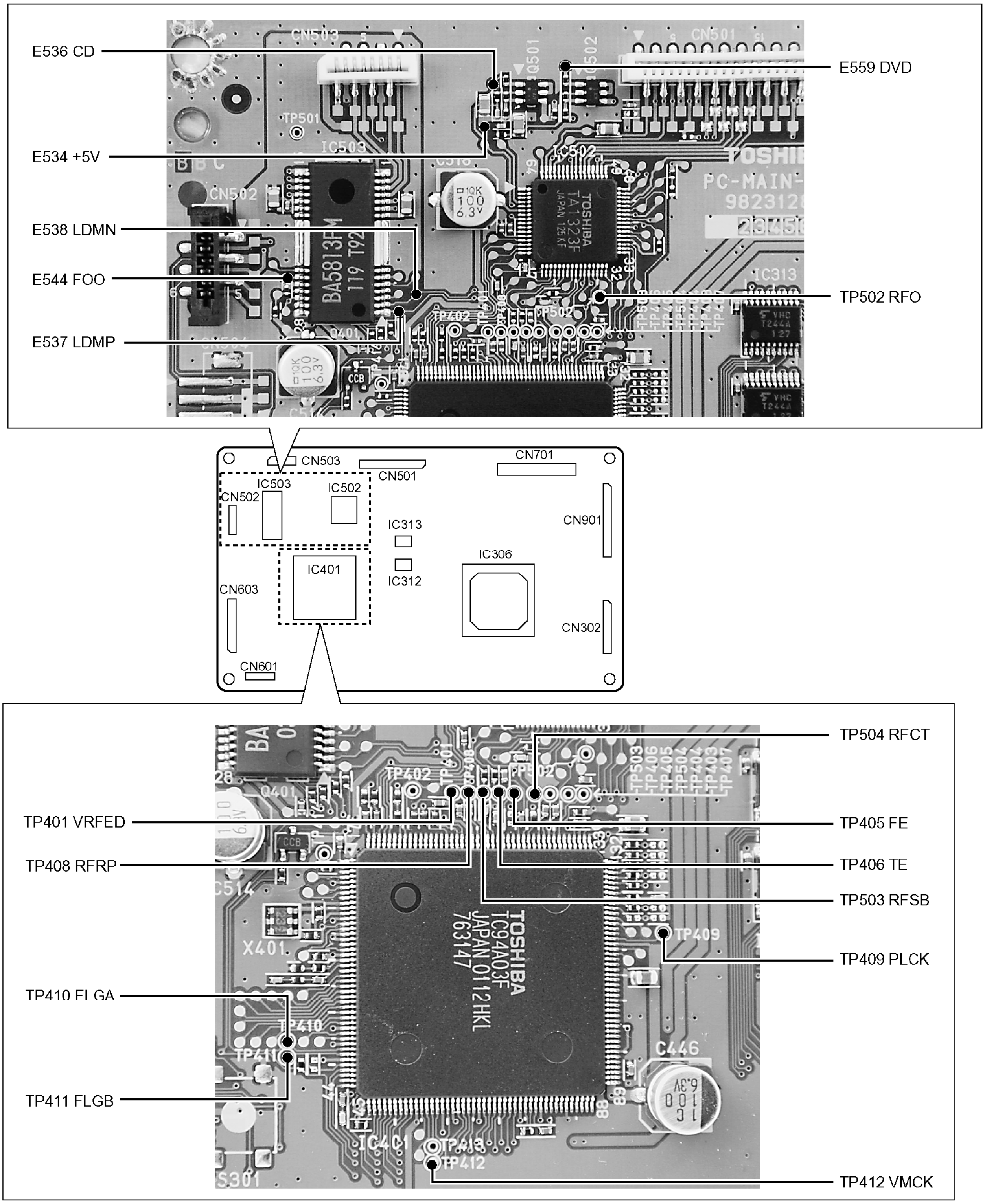

E536 CD
E559 DVD
E534 +5V
E538 LDMN
E544 FOO
TP502 RFO
E537 LDMP
CN503
CN501
CN701
IC503
IC502
CN502
IC313
CN901
IC306
IC401
IC312
CN603
CN302
CN601
TP504 RFCT
TP401 VRFED
TP405 FE
TP408 RFRP
TP406 TE
TP503 RFSB
TP409 PLCK
TP410 FLGA
TP411 FLGB
TP412 VMCK

Fig. 1-3-21

SECTION 2

PART REPLACEMENT AND ADJUSTMENT PROCEDURES

CAUTIONS BEFORE STARTING SERVICING

Electronic parts are susceptible to static electricity and may easily damaged, so do not forget to take a proper grounding treatment as required.

Many screws are used inside the unit. To prevent missing, dropping, etc. of the screws, always use a magnetized screwdriver in servicing. Several kinds of screws are used and some of them need special cautions. That is, take care of the tapping screws securing molded parts and fine pitch screws used to secure metal parts. If they are used improperly, the screw holes will be easily damaged and the parts can not be fixed.

1. REPLACEMENT OF MECHANICAL PARTS

1-1. Cabinet Replacement

1-1-1. Top Cover

1. Remove five screws (1) and remove the top cover (2).

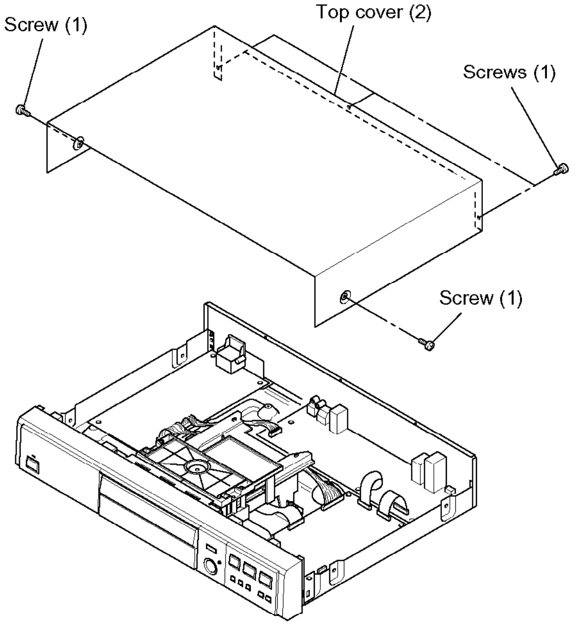

Screw (1)
Top cover (2)
Screws (1)
Screw (1)

Fig. 2-1-1

1-1-2. Clamper Stay

<Removal>

1. Remove two screws (1).
2. Release two claws and remove the clamper stay (2).

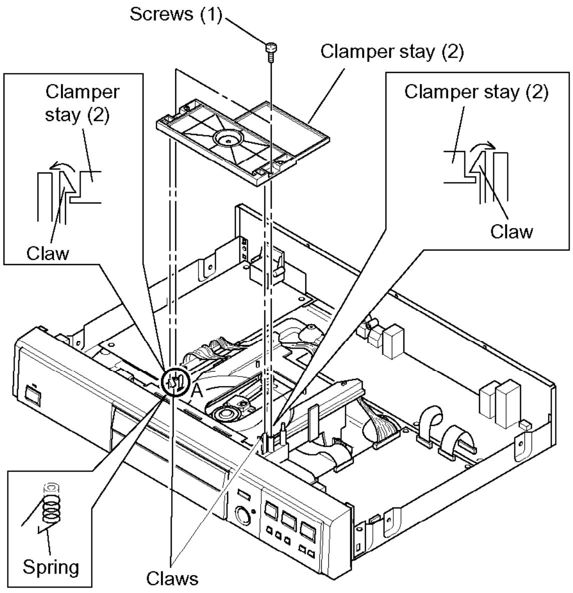

Screws (1)
Clamper stay (2)
Clamper stay (2)
Claw
Clamper stay (2)
Claw
A
Spring
Claws

Fig. 2-1-2

<Mounting >

1. The spring for tray side pressure is inserted into the portion “A”. (Refer to Fig. 2-1-2.)
2. By referring to Fig. 2-1-3, insert the spring normally and mount the clamper stay.

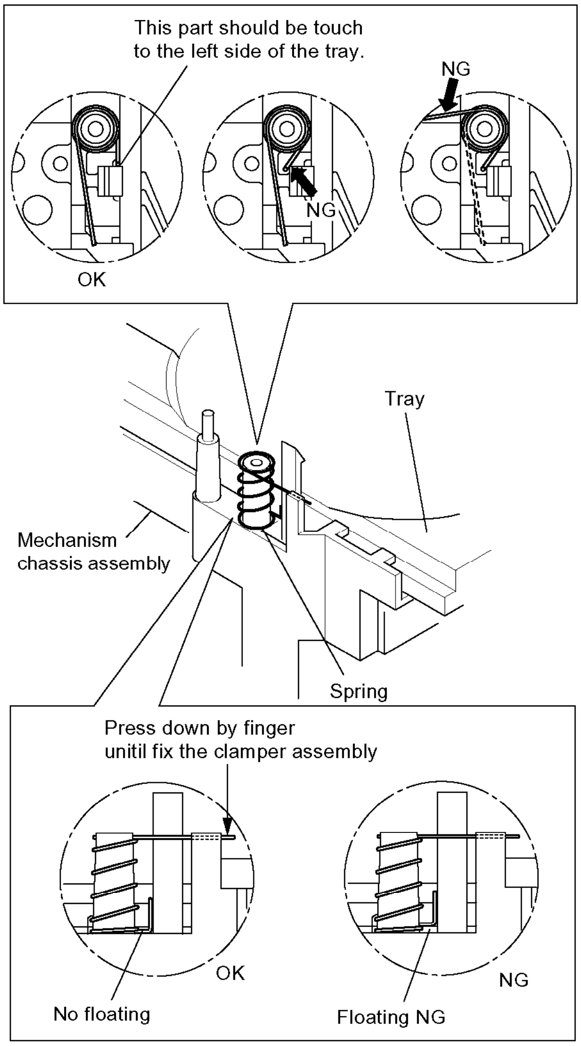

This part should be touch
to the left side of the tray.
NG
OK
NG
Tray
Mechanism
chassis assembly
Spring
Press down by finger
unitil fix the clamper assembly
OK
No floating
NG
Floating NG

Fig. 2-1-3

1-1-3. Tray Panel

<Tray Ejection>

1. Slide the slider (2) of the mechanism chassis assembly (1) with a screwdriver, etc. in the arrow direction, so that the tray (3) is ejected.

Note:

- Take care not to damage the pickup and other parts.

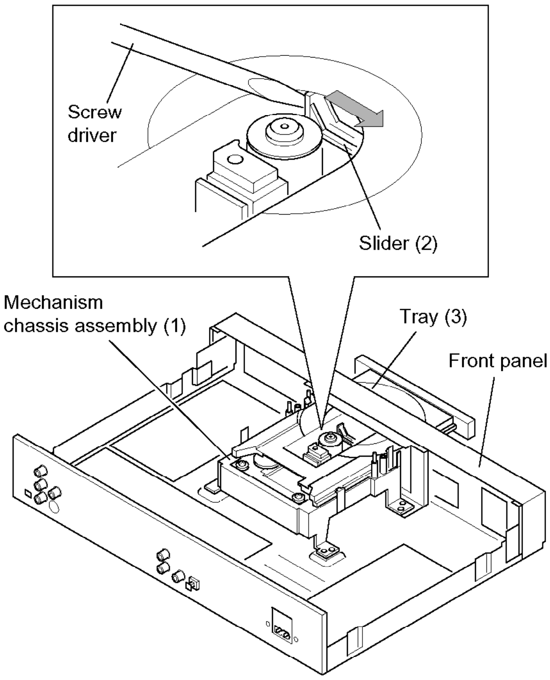

Screw
driver
Slider (2)
Mechanism
chassis assembly (1)
Tray (3)
Front panel

Fig. 2-1-4

<Tray Panel Removal>

1. Eject the tray (3).
2. Twist the tray panel (4) a little in the arrow A direction with the tray (3) hold by hand to release two claws and lift up the tray panel (4) in the arrow B direction, then the tray panel (4) is removed.
(Refer to Fig. 2-1-5.)
3. When mounting the tray panel (4), insert the tray panel (4) along the grooves of the both sides of the tray (3) until clicking.

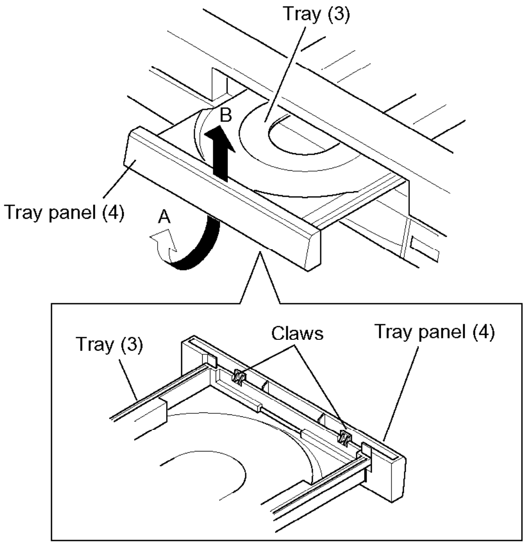

Tray (3)
B
Tray panel (4)
A
Tray (3)
Claws
Tray panel (4)

Fig. 2-1-5

1-1-4. Front Panel and Tray

1. Remove the flexible cable (1).
2. Remove one screw (2) and remove the GND lead (5).
3. Release four claws and remove the front panel (4).
4. Pull out the tray (3) to this side.

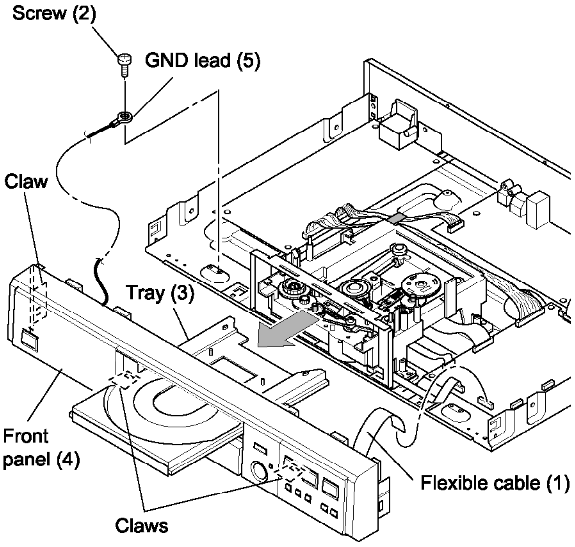

Screw (2)
GND lead (5)
Claw
Tray (3)
Front panel (4)
Claws
Flexible cable (1)

Fig. 2-1-6

Note:

- Insert the tray (3) with the front side of the pickup mechanism assembly descended. (The slider positions to the left side.)
- The gears are required to match their phases each other. After setting the gear (4) as shown in the figure “A”, insert the tray (3). When inserting a tray (3), push the rack gear side shown by the arrow.
- Confirm that the mark of the gear matches with the triangle mark on the reverse side of the tray in the tray close status. (The gear is rotated with the slider locks.) (Refer to Fig. B.)

Fig. A

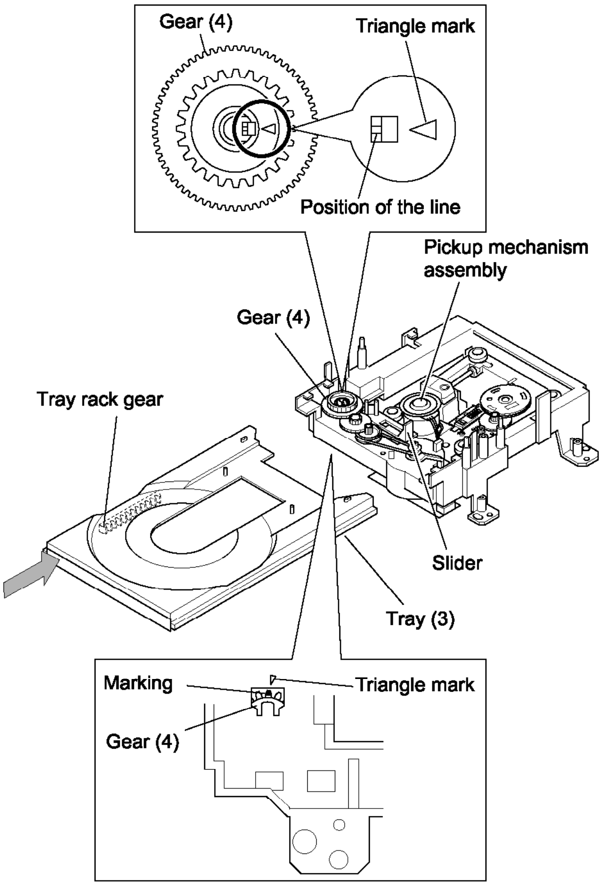

Gear (4)
Triangle mark
Position of the line
Pickup mechanism assembly
Gear (4)
Tray rack gear
Slider
Tray (3)
Marking
Triangle mark
Gear (4)

Fig. B

Fig. 2-1-7

1-1-5. Rear Panel

1. Remove eight screws (1) and remove the rear panel (2).

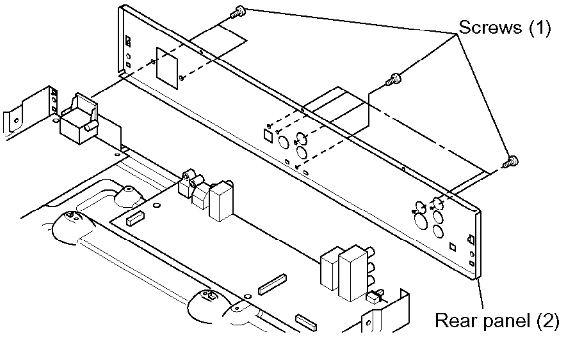

Screws (1)
Rear panel (2)

Fig. 2-1-8

1-2. PC Board Replacement

1-2-1. Main PC Board

Note:

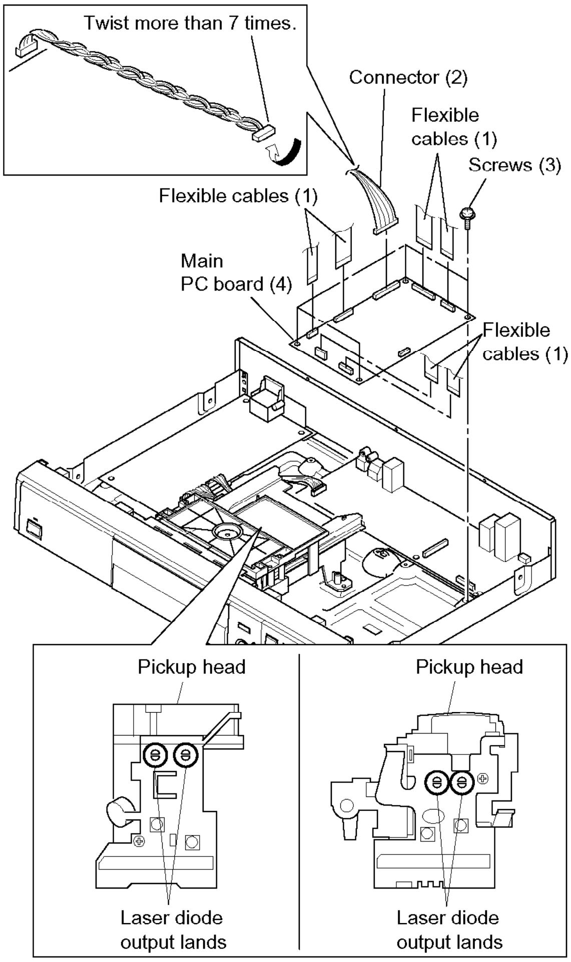
- Before removing the main PC board (4), be sure to short-circuit the laser diode output land.

  After replacing, open the land as it was after inserting the flexible cables (1).

1. Remove the top cover. (Refer to item 1-1-1.)
2. Remove six flexible cables (1) and remove one connector (2).
3. Remove four screws (3).
4. Remove the main PC board (4).

Note:

- When mounting, be sure to twist the wire for the connector (2) several times.



Twist more than 7 times.
Connector (2)
Flexible cables (1)
Screws (3)
Flexible cables (1)
Main PC board (4)
Flexible cables (1)
Pickup head
Laser diode output lands
Pickup head
Laser diode output lands

Type A Type B

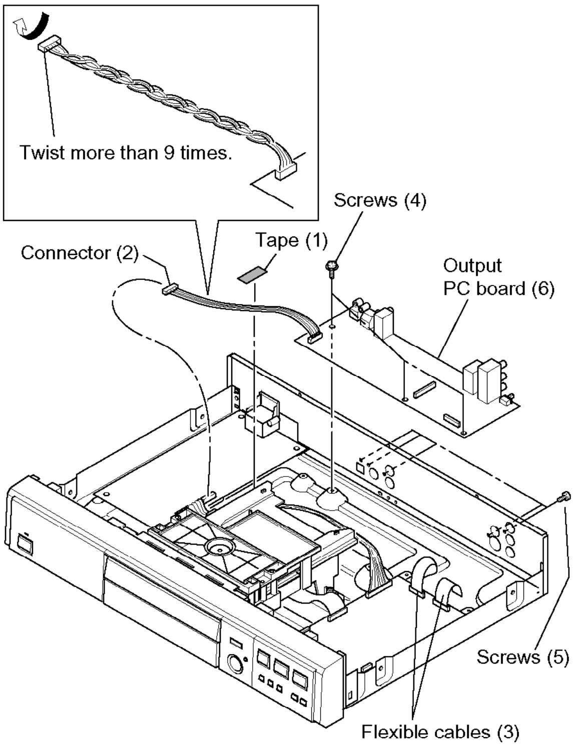
Fig. 2-1-9

1-2-2. Output PC board

1. Peel off the tape (1).
2. Remove the connector (2).
3. Disconnect two flexible cables (3).
4. Remove three screws (4).
5. Remove five screws (5) and remove the output PC board (6).

Note:

- When mounting, be sure to twist the wire for the connectors (2) several times.



Twist more than 9 times.
Screws (4)
Connector (2)
Tape (1)
Output PC board (6)
Screws (5)
Flexible cables (3)

Fig. 2-1-10

1-2-3. Power Supply PC Board

1. Peel off the tape (1).
2. Remove the connectors (2) and (3).
3. Remove three screws (4).
4. Remove two screws (5).
5. Remove the power supply PC board (6).

Note:

- When mounting, be sure to twist the wire for the connectors (2) and (3) several times.

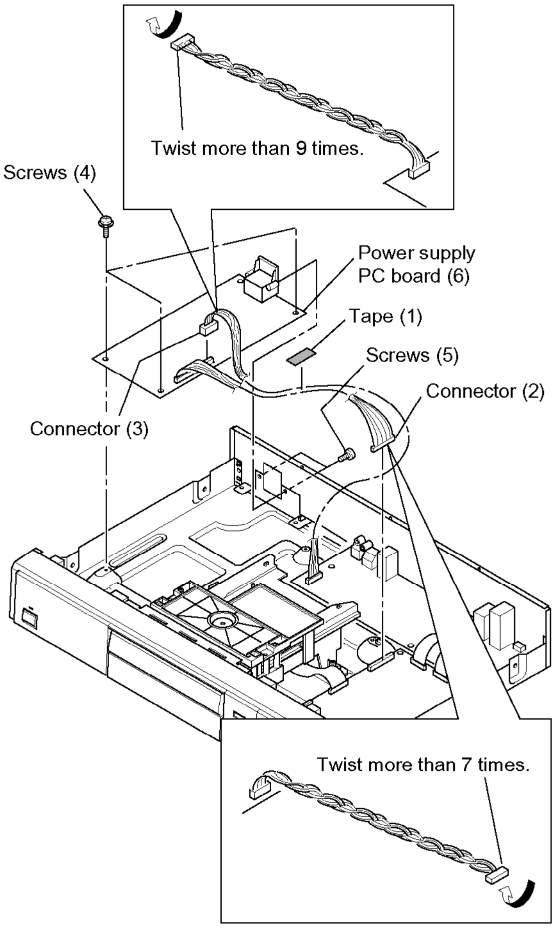

Twist more than 9 times.
Screws (4)
Power supply PC board (6)
Tape (1)
Screws (5)
Connector (2)
Connector (3)
Twist more than 7 times.

Fig. 2-1-11

1-2-4. Front PC Board

1. Remove the front panel. (Refer to item 1-1-4.)
2. Remove one flexible cable (1).
3. Remove six screws (2) and remove the front display PC board (3).
4. Remove two screws (4) and remove the power switch PC board (5).
5. Remove three screws (6) and the ENTER switch (7).

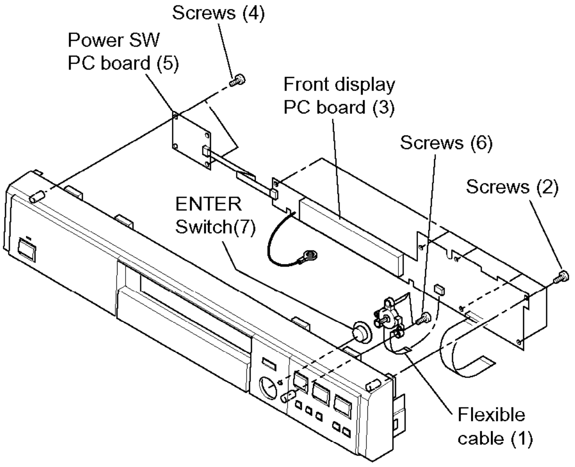

Screws (4)
Power SW PC board (5)
Front display PC board (3)
Screws (6)
Screws (2)
ENTER Switch(7)
Flexible cable (1)

Fig. 2-1-12

1-3. Mechanism Parts

1-3-1. Mechanism Chassis Assembly

Note:

- When removing the mechanism chassis assembly (3), be sure to short-circuit the laser diode output land before removing the connector and the flexible cables.

  After replacing, open the land as it was after inserting the connector and flexible cables.

1. Remove the tray. (Refer to items 1-1-3 and 1-1-4.)
2. Remove three flexible cables (1).
3. Remove four screws (2) and remove the mechanism chassis assembly (3).

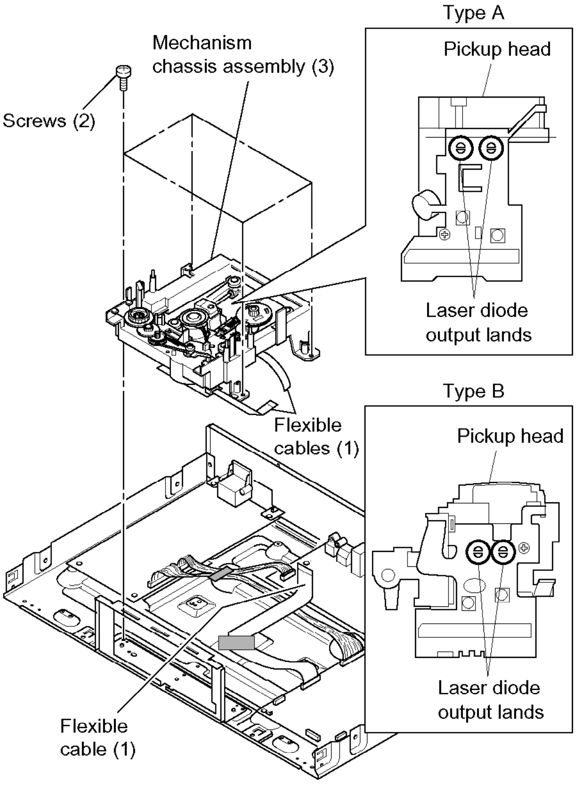

Type A
Mechanism chassis assembly (3)
Pickup head
Screws (2)
Laser diode output lands
Type B
Flexible cables (1)
Pickup head
Laser diode output lands
Flexible cable (1)

Fig. 2-1-13

1-3-2. Loading Belt

1. Remove the gear (1) by releasing the claw.
2. Remove the gear (2).
3. Remove the gear (3) and the loading belt (4).
4. Replace the loading belt (4) with a new one.
5. When mounting, perform the reverse order of the removal.

Note:

- When mounting the loading belt (4), twisting and attaching of a grease, etc. are not allowed.

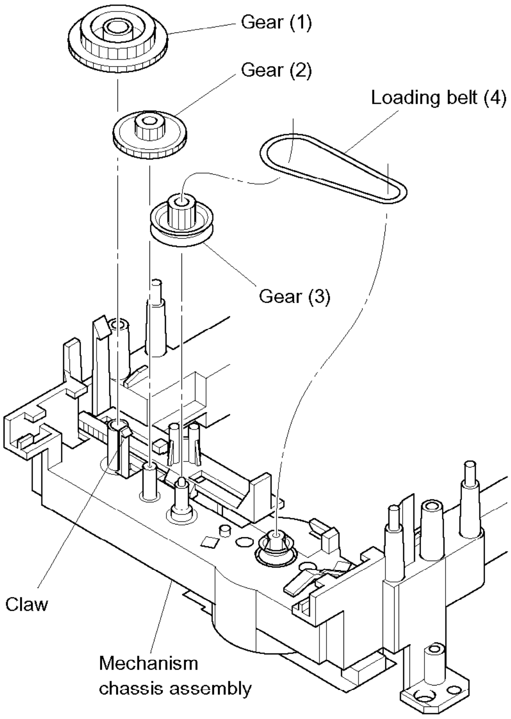

Gear (1)
Gear (2)
Loading belt (4)
Gear (3)
Claw
Mechanism chassis assembly

Fig. 2-1-14

1-3-3. Loading Motor

1. Remove the loading belt. (Refer to item 1-3-2.)
2. Remove two screws (1) and two claws. Then remove the loading motor (2) (with the loading motor PC board (3) attached).
3. Desolder the terminal section of the loading motor (2) and remove the loading motor PC board (3).
4. Replace the loading motor (2) with a new one.
5. When mounting, perform the reverse order of the removal.

Note:

- When replacing the loading motor, meet the polarity phase of the terminals. (Mount the motor with the label positioned as shown in Fig. 2-1-15.)

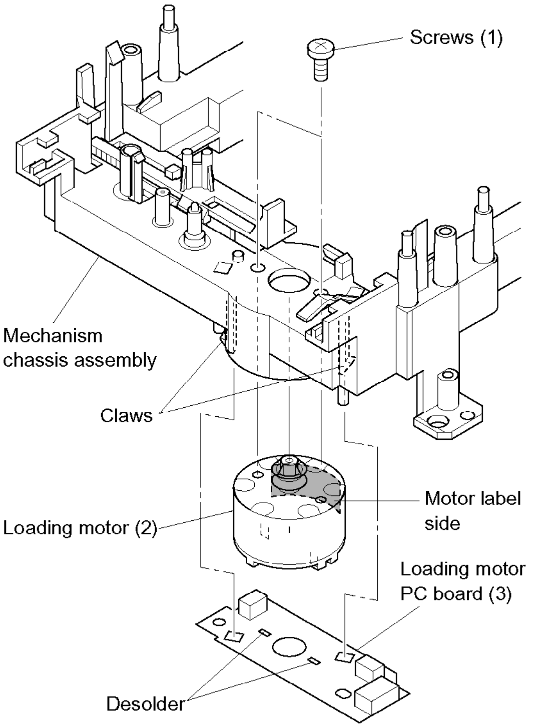

Screws (1)
Mechanism chassis assembly
Claws
Loading motor (2)
Motor label side
Loading motor PC board (3)
Desolder

Fig. 2-1-15

1-3-4. Sub Chassis (with a pickup mechanism)

1. Turn the mechanism chassis assembly (1) upside down.
2. Remove one screw (2) and one washer (3) release the boss “A” from the claw. Then remove the sub chassis (4) (with the pickup mechanism) by sliding in the arrow direction.
3. When mounting, perform the reverse order of the removal.

Note:

- When mounting the sub chassis (4) (with the pickup mechanism), first, insert the boss “C” along the groove of the cam slider up/down cam (5) and next, the boss “B” and “A”.
- The boss “A” may be used with washers. (One or two washers are used to prevent from the slust rattling. In some cases, no washer is used.)

  When the washer(s) is used, be sure to assemble as it was without losing.

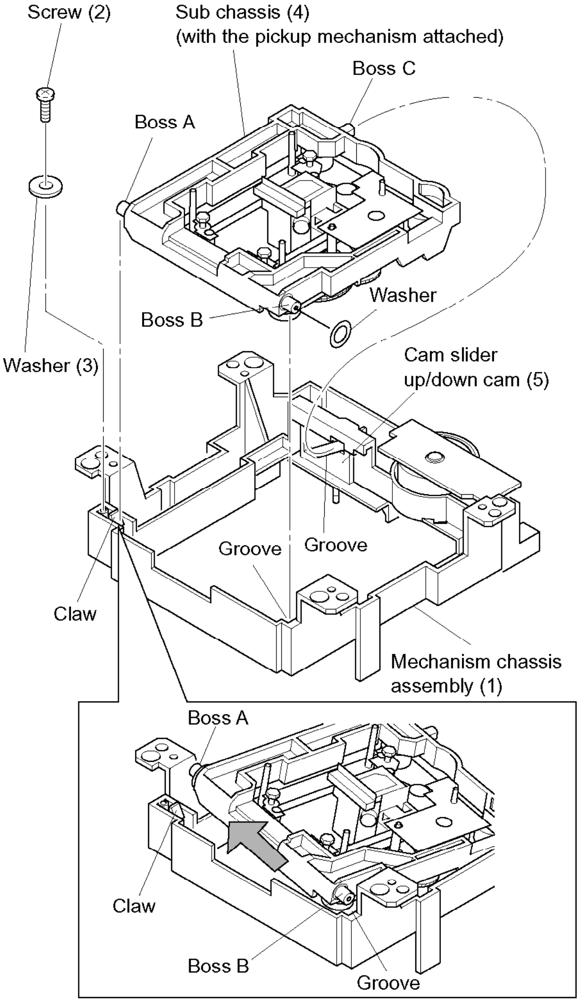

Screw (2)
Sub chassis (4)
(with the pickup mechanism attached)
Boss C
Boss A
Washer
Boss B
Washer (3)
Cam slider up/down cam (5)
Groove
Groove
Claw
Mechanism chassis assembly (1)
Boss A
Claw
Boss B
Groove

Fig. 2-1-16

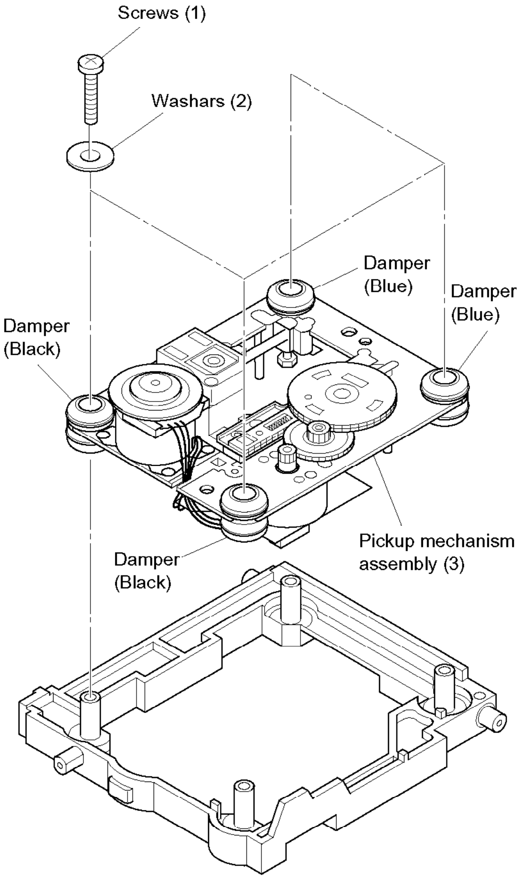
1-3-5. Pickup Mechanism Assembly

<Removal>

1. Remove four screws (1) and four washers (2) then remove the pickup mechanism assembly (3).

<Mounting>

1. Replace the pickup mechanism assembly (3) with a new one.
2. When mounting, perform the reverse order of the removal.

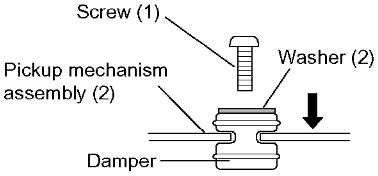


Screws (1)
Washars (2)
Damper (Blue)
Damper (Blue)
Damper (Black)
Damper (Black)
Pickup mechanism assembly (3)

Fig. 2-1-17

Note:

- The dampers' color differs when used for the front side and the rear.
- When mounting the pickup mechanism assembly (2) with the screws (1), push the pickup mechanism assembly (2) downward without being caught and tighten the screws (1) after placing the washer with the damper bent.



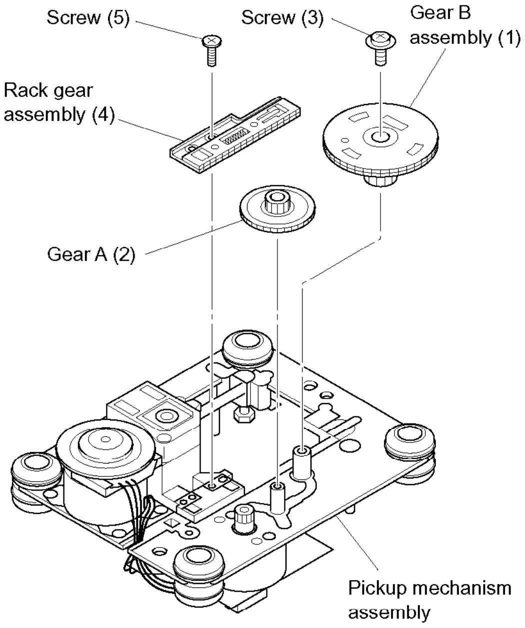
Screw (1)
Washer (2)
Pickup mechanism assembly (2)
Damper

Fig. 2-1-18

1-3-6. Gear B Assembly, Gear A and Rack Gear Assembly

<Removal>

1. Remove one screw (3) and remove the gear B assembly (1).
2. Remove the gear A (2).
3. Remove one screw (5) and remove the rack gear assembly (4).



Screw (5)
Screw (3)
Gear B assembly (1)
Rack gear assembly (4)
Gear A (2)
Pickup mechanism assembly

Fig. 2-1-19

<Mounting>

1. When mounting, perform the reverse order of the removal.
2. Mount the gear B assembly (1) by pushing the pickup head (5) to the disc motor side (arrow A direction) and shifting the upper gear of the rack gear assembly (4) in the arrow B direction. (Refer to Fig. 2-1-20.)
3. Fit the positioning holes on the upper gear and lower gear of the gear B assembly (1) and mount on the pickup mechanism assembly with the phase matched.

   At this time, note that the phase of the gear B assembly (1) and the gear A (2) shows the status in the Fig. 2-1-21.

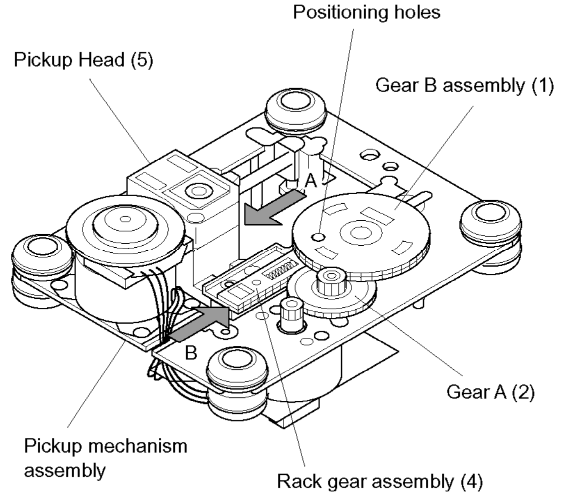

Positioning holes
Pickup Head (5)
Gear B assembly (1)
A
B
Gear A (2)
Pickup mechanism assembly
Rack gear assembly (4)

Fig. 2-1-20

Note:

- Mount the gear B assembly (1) and the gear A (2) with their gear teeth placed more than one tooth at least inside the shaded portion.

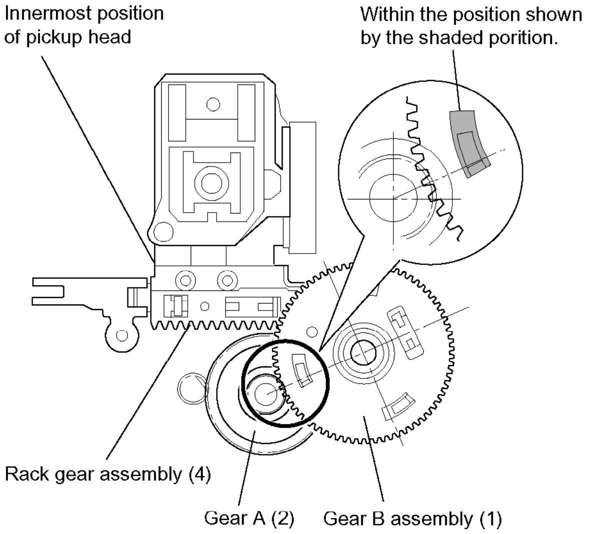

Innermost position of pickup head
Within the position shown by the shaded porition.
Rack gear assembly (4)
Gear A (2)
Gear B assembly (1)

Fig. 2-1-21

1-3-7. Feed Motor

<Removal>

1. Remove the gear B assembly and the gear A. (Refer to item 1-3-6.)
2. Remove two screws (1) and remove the feed motor (2) (with the feed motor PC board (3) attached). (Refer to Fig. 2-1-22.)
3. Desolder the terminals of the feed motor (2) and remove the feed motor PC board (3).

<Mounting>

1. Tighten the feed motor (2) on the pickup mechanism assembly with two screws (1).
2. Insert the feed motor PC board (3) with the positioning pin on the chassis matched and solder the terminals.
3. Perform the reverse order of the removal.

Note:

- After mounting, put the lead wires through the notch of the pickup mechanism assembly.
- When replacing the loading motor, meet the polarity phase of the terminals. (Mount the motor with the label positioned as shown in Fig. 2-1-22.)

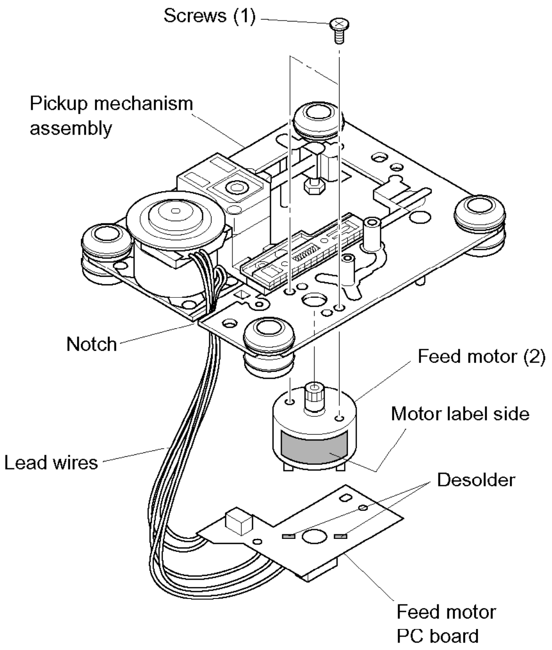

Screws (1)
Pickup mechanism assembly
Notch
Feed motor (2)
Motor label side
Lead wires
Desolder
Feed motor PC board

Fig. 2-1-22

SECTION 3
SERVICING DIAGRAMS

1. STANDING PC BOARDS FOR SERVICING

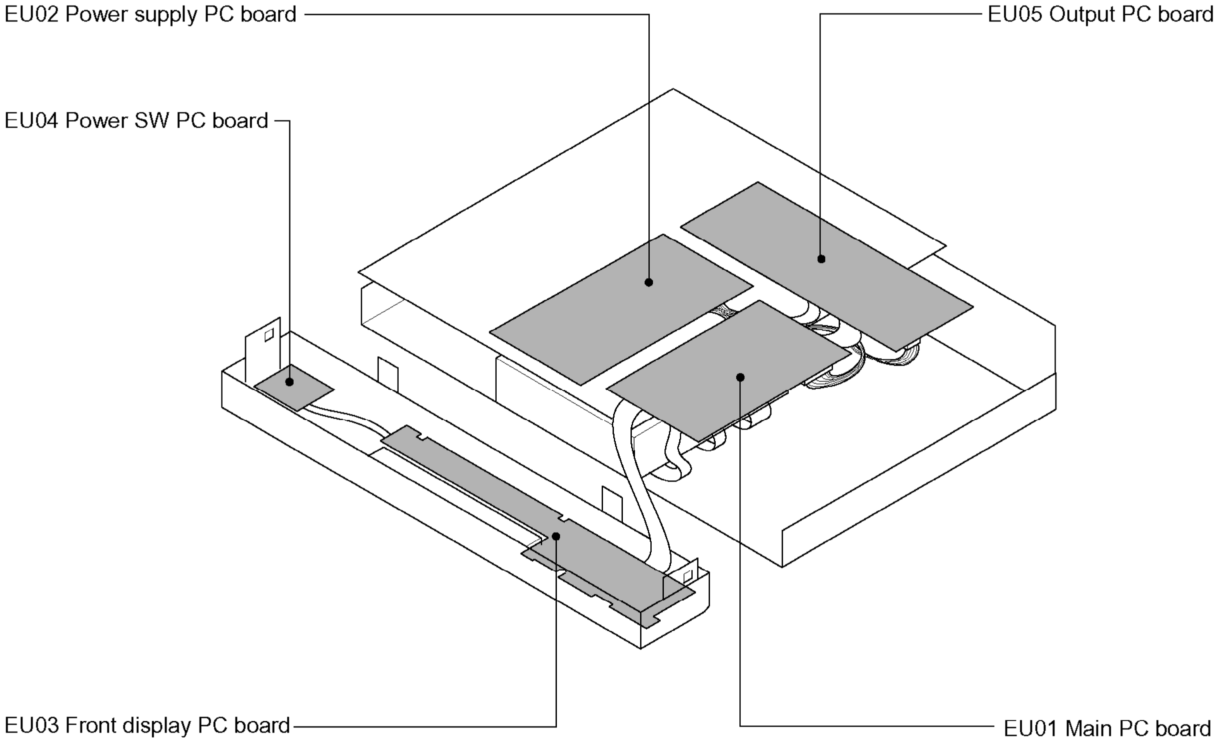

EU02 Power supply PC board
EU05 Output PC board
EU04 Power SW PC board
EU03 Front display PC board
EU01 Main PC board

Fig. 3-1-1

2. CIRCUIT SYMBOLS AND SUPPLEMENTARY EXPLANATION

2-1. Precautions for Part Replacement

- In the schematic diagram, parts marked ⚠ (ex. ⚠ F801) are critical part to meet the safety regulations, so always use the parts bearing specified part codes (SN) when replacing them.
- Using the parts other than those specified shall violate the regulations, and may cause troubles such as operation failures, fire etc.

2-2. Solid Resistor Indication

Unit	None ....Ω K ....kΩ M ....MΩ
Tolerance	None ....±5% B ....±0.1% C ....±0.25% D ....±0.5% F ....±1% G ....±2% K ....±10% M ....±20%
Rated Wattage	(1) Chip Parts None......... 1/16W (2) Other Parts None......... 1/6W Other than above, described in the Circuit Diagram.
Type	None ....Carbon film S ....Solid R ....Oxide metal film W ....Metal film W ....Cement FR ....Fusible

Eg. 1

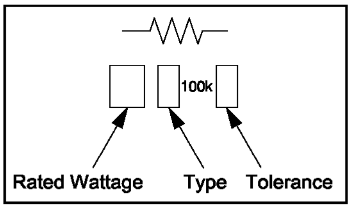

100k
Rated Wattage
Type
Tolerance

FIg. 3-2-1

2-3. Capacitance Indication

Symbol	⊣⊢ + ...Electrolytic, Special electrolytic ⊣⊢ NP ....Non polarity electrolytic ⊣⊢ ....Ceramic, plastic ⊣⊢ M ....Film ⊣⊬ ....Trimmer
Unit	None ....F µ ....µF p ....pF
Rated voltage	None ....50V For other than 50V and electrolytic capacitors, described in the Circuit Diagram.
Tolerance	(1) Ceramic, plastic, and film capacitors of which capacitance are more than 10 pF. None ....±5% or more B ....±0.1% C ....±0.25% D ....±0.5% F ....±1% G ....±2% (2) Ceramic, plastic, and film capacitors of which capacitance are 10 pF or less. None ....more than ±5% pF B ....±0.1 pF C ....±0.25 pF (3) Electrolytic, Trimmer Tolerance is not described.
Temperature characteristic (Ceramic capacitor)	None ....SL For others, temperature characteristics are described. (For capacitors of 0.01 µF and no indications are described as F.)
Static electricity capacity (Ceramic capacitor)	Sometimes described with abbreviated letters as shown in Eg. 3.

Eg. 2

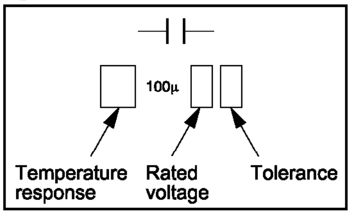

100µ
Temperature response
Rated voltage
Tolerance

Fig. 3-2-2

Eg. 3

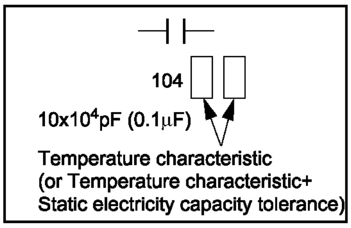

104
10x10⁴pF (0.1µF)
Temperature characteristic
(or Temperature characteristic+
Static electricity capacity tolerance)

Fig. 3-2-3

2-4. Inductor Indication

Unit	None .... H µ .... µH m .... mH
Tolerance	None .... ±5% B .... ±0.1% C .... ±0.25% D .... ±0.5% F .... ±1% G .... ±2% K .... ±10% M .... ±20%

Eg. 4

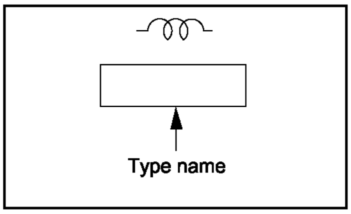


Fig. 3-2-4

Eg. 5

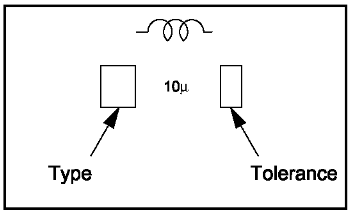


Fig. 3-2-5

2-5. Waveform and Voltage Measurement

- The waveforms for CD/DVD and RF shown in the circuit diagrams are obtained when a test disc is played back.
- All voltage values except the waveforms are expressed in DC and measured by a digital voltmeter.

2-6. Others

- The parts indicated with "NC" or "KETU" etc. are not used in the circuits of this model.

3. PRINTED WIRING BOARD AND SCHEMATIC DIAGRAM

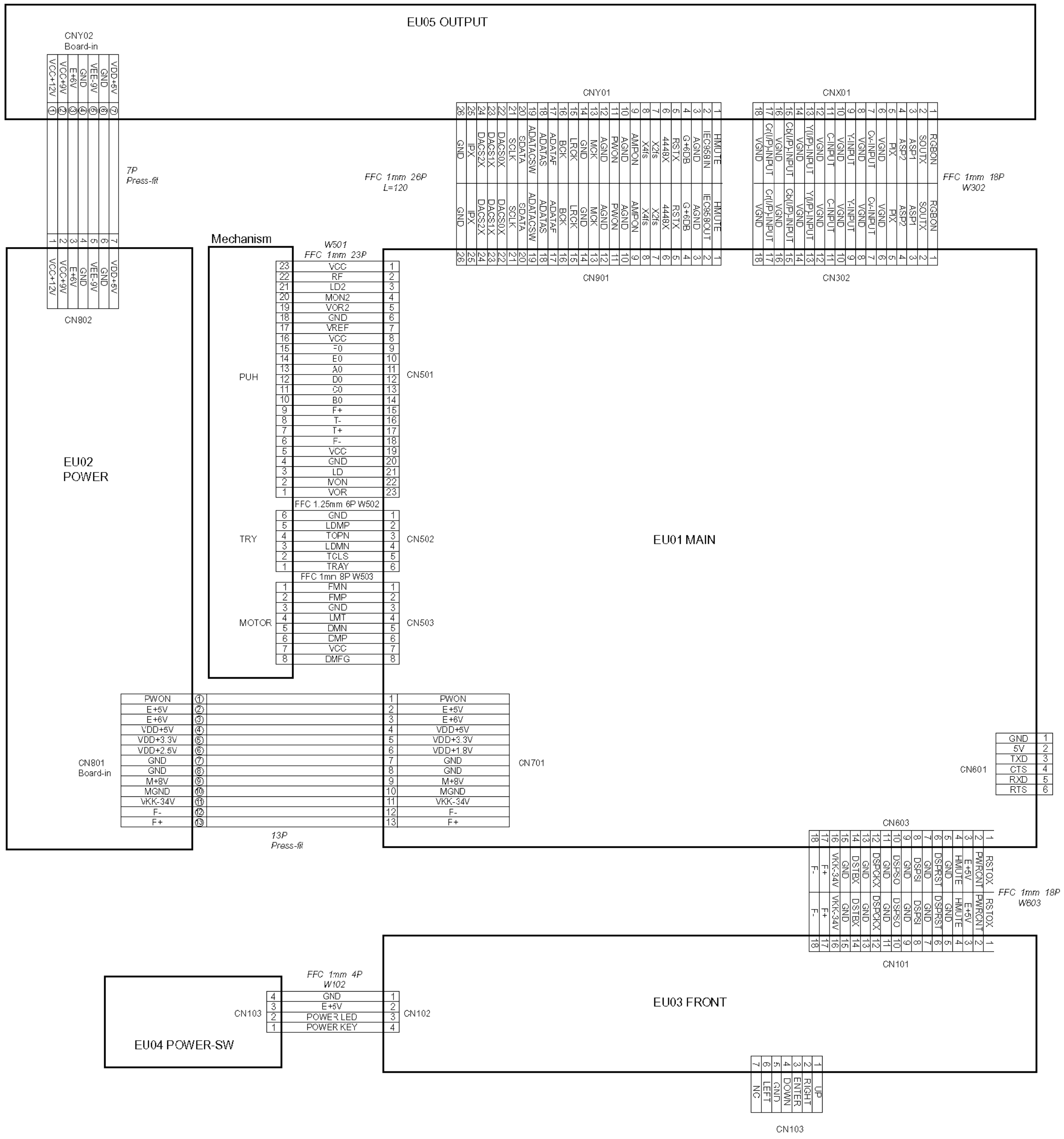

EU05 OUTPUT
EU01 MAIN
EU02 POWER
EU03 FRONT
EU04 POWER-SW
Mechanism
PUH
TRY
MOTOR
CNY02 Board-in
VCC+12V VCC+9V E+6V GND VEE-9V GND VDD+6V
7P Press-fit
CN802
CNY01
CN901
FFC 1mm 26P L=120
HMUTE IEC958IN IEC958OUT AGND G+6DB RSTX 4448X X2fs X4fs AMPON AGND PWON AGND MCK GND LRCK BCK ADATAF ADATAS ADATACSW SDATA SCLK DACS0X DACS1X DACS2X IPX GND
CNX01
CN302
FFC 1mm 18P W302
RGBON SOUTX ASP1 ASP2 PIX VGND Cv-INPUT VGND Y-INPUT VGND C-INPUT VGND Y(I/P)-INPUT VGND Cb(I/P)-INPUT VGND Cr(I/P)-INPUT VGND
W501 FFC 1mm 23P
CN501
VCC RF LD2 MON2 VOR2 GND VREF VCC F0 E0 A0 D0 C0 B0 F+ T- T+ F- VCC GND LD MON VOR
FFC 1.25mm 6P W502
CN502
GND LDMP TOPN LDMN TCLS TRAY
FFC 1mm 8P W503
CN503
FMN FMP GND LMT DMN DMP VCC DMFG
CN801 Board-in
CN701
13P Press-fit
PWON E+5V E+6V VDD+6V VDD+3.3V VDD+2.5V VDD+1.8V GND GND M+8V MGND VKK-34V F- F+
CN601
GND 5V TXD CTS RXD RTS
CN603
CN101
FFC 1mm 18P W603
RSTOX PWRCNT E+5V HMUTE GND DSPRST GND DSPSI GND DSPSO GND DSPCKX GND DSTBX GND VKK-34V F+ F-
CN103
CN102
FFC 1mm 4P W102
GND E+5V POWER LED POWER KEY
UP RIGHT ENTER DOWN GND LEFT NC

Fig. 3-3-1

4. BLOCK DIAGRAMS

4-1. Overall Block Diagram

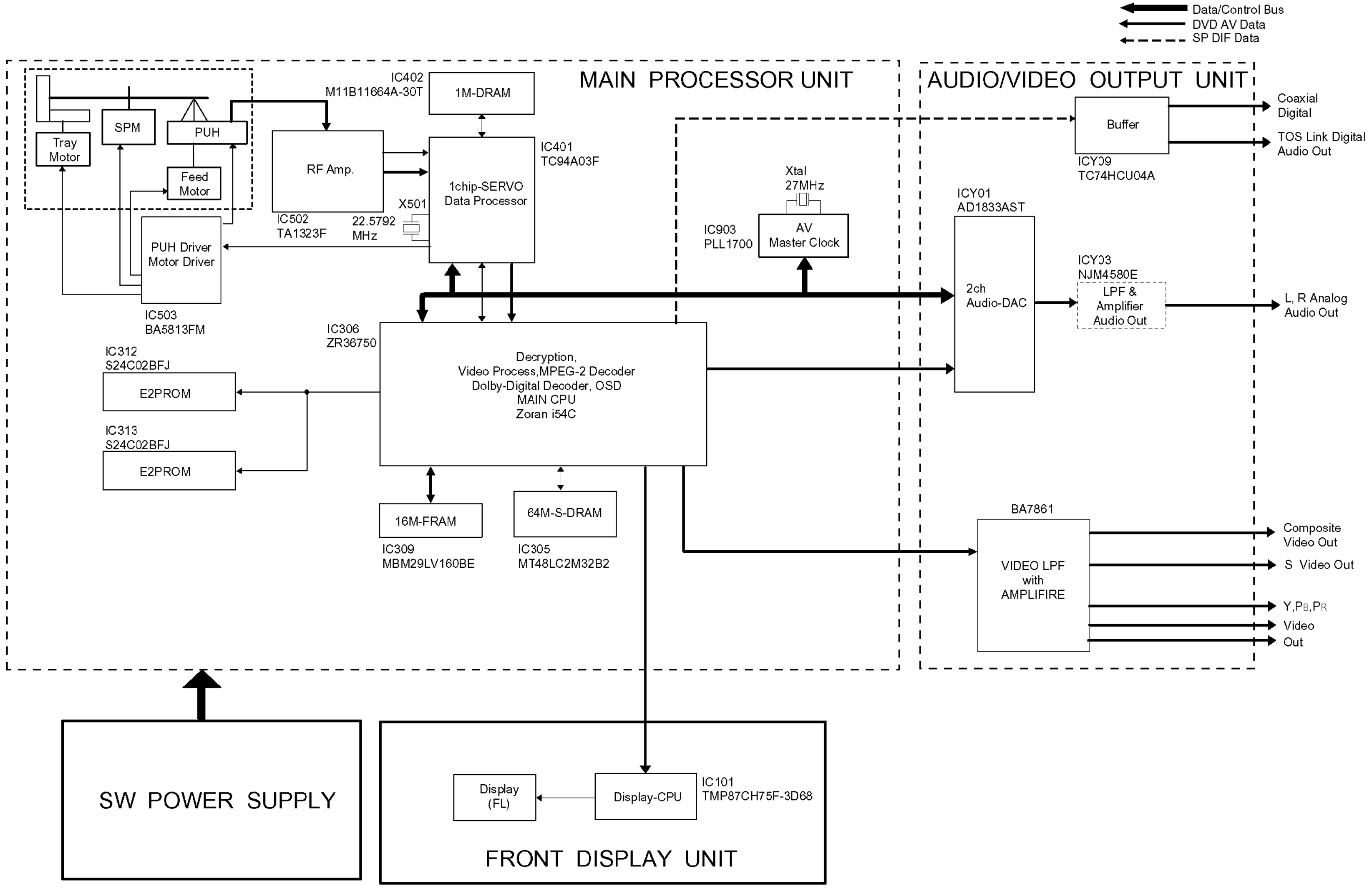
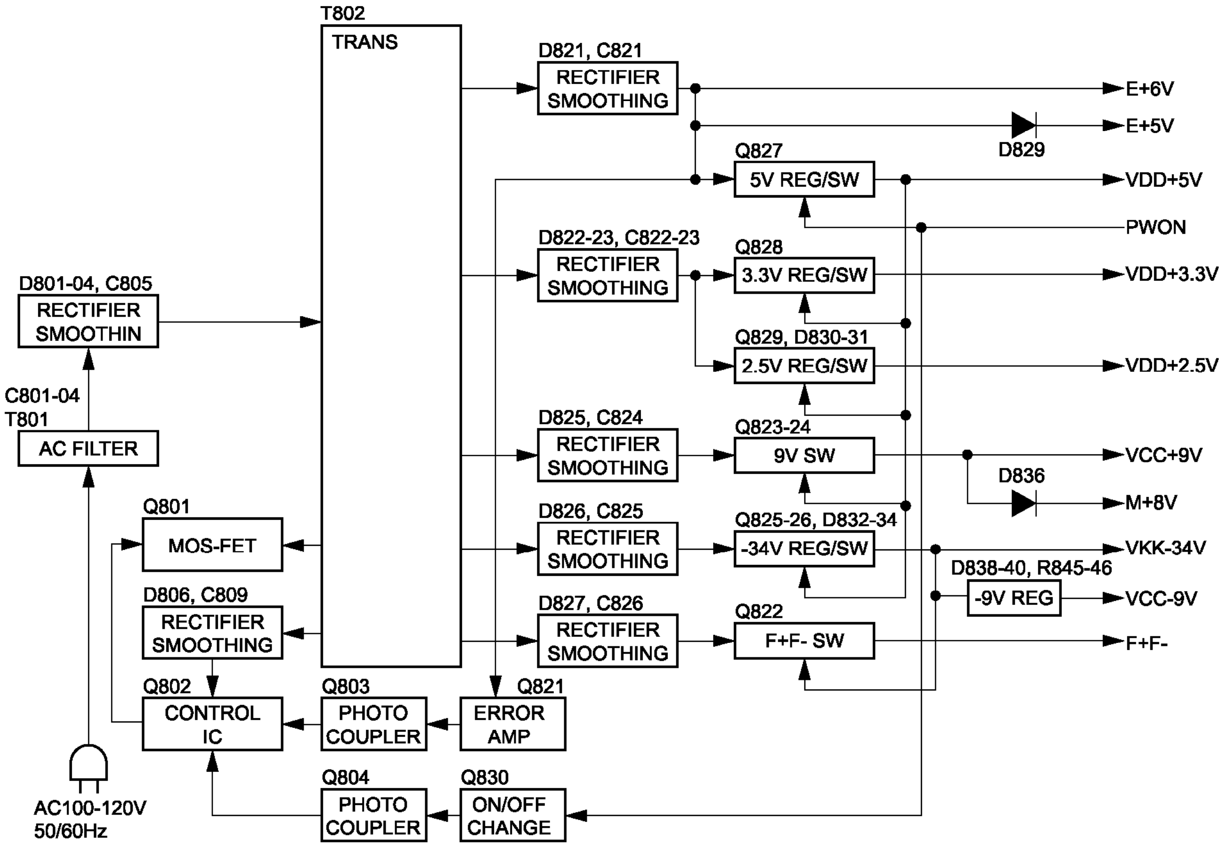

Data/Control Bus
DVD AV Data
SP DIF Data
MAIN PROCESSOR UNIT
AUDIO/VIDEO OUTPUT UNIT
Tray Motor
SPM
PUH
Feed Motor
PUH Driver Motor Driver
IC503
BA5813FM
RF Amp.
IC502
TA1323F
IC402
M11B11664A-30T
1M-DRAM
1chip-SERVO Data Processor
IC401
TC94A03F
X501
22.5792 MHz
Xtal
27MHz
AV Master Clock
IC903
PLL1700
IC306
ZR36750
Decryption,
Video Process,MPEG-2 Decoder
Dolby-Digital Decoder, OSD
MAIN CPU
Zoran i54C
IC312
S24C02BFJ
E2PROM
IC313
S24C02BFJ
E2PROM
16M-FRAM
IC309
MBM29LV160BE
64M-S-DRAM
IC305
MT48LC2M32B2
Buffer
ICY09
TC74HCU04A
Coaxial Digital
TOS Link Digital Audio Out
ICY01
AD1833AST
2ch Audio-DAC
ICY03
NJM4580E
LPF & Amplifier Audio Out
L, R Analog Audio Out
BA7861
VIDEO LPF with AMPLIFIRE
Composite Video Out
S Video Out
Y,PB,PR Video Out
SW POWER SUPPLY
Display (FL)
Display-CPU
IC101
TMP87CH75F-3D68
FRONT DISPLAY UNIT

Fig.3-4-1

4-2. Power Supply Block Diagram



T802
TRANS
D821, C821
RECTIFIER SMOOTHING
E+6V
E+5V
D829
Q827
5V REG/SW
VDD+5V
PWON
D822-23, C822-23
RECTIFIER SMOOTHING
Q828
3.3V REG/SW
VDD+3.3V
D801-04, C805
RECTIFIER SMOOTHIN
Q829, D830-31
2.5V REG/SW
VDD+2.5V
C801-04
T801
AC FILTER
D825, C824
RECTIFIER SMOOTHING
Q823-24
9V SW
VCC+9V
D836
M+8V
Q801
MOS-FET
D826, C825
RECTIFIER SMOOTHING
Q825-26, D832-34
-34V REG/SW
VKK-34V
D838-40, R845-46
-9V REG
VCC-9V
D806, C809
RECTIFIER SMOOTHING
D827, C826
RECTIFIER SMOOTHING
Q822
F+F- SW
F+F-
Q802
CONTROL IC
Q803
PHOTO COUPLER
Q821
ERROR AMP
AC100-120V
50/60Hz
Q804
PHOTO COUPLER
Q830
ON/OFF CHANGE

Fig. 3-4-2

4-3. Front Display, Power Switch Block Diagram

4-3-1. Front Display

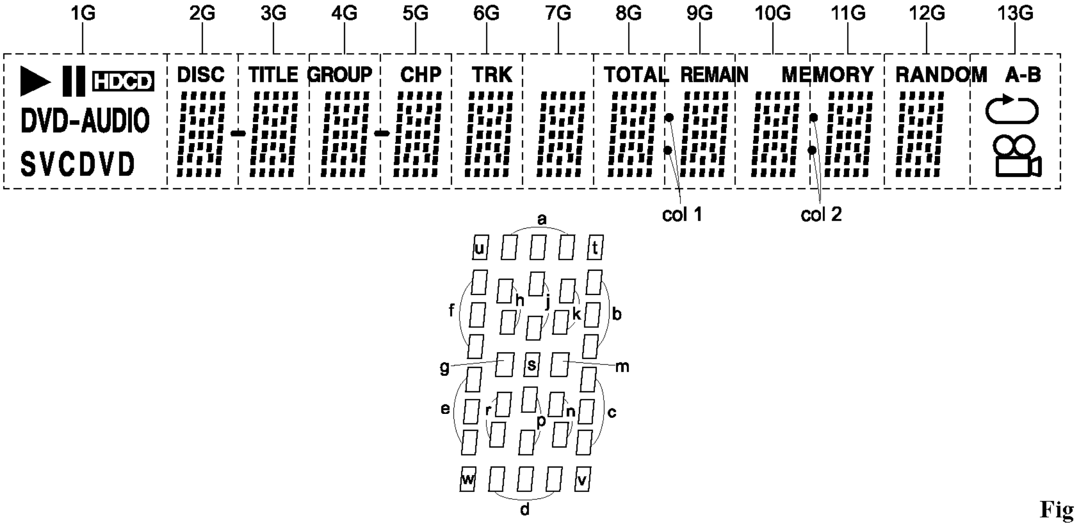

1G
2G
3G
4G
5G
6G
7G
8G
9G
10G
11G
12G
13G
▶ II HDCD
DVD-AUDIO
SVCDVD
DISC
TITLE
GROUP
CHP
TRK
TOTAL
REMAIN
MEMORY
RANDOM
A-B
col 1
col 2
a
u
t
h
j
k
f
b
g
s
m
e
r
p
n
c
w
v
d

Fig. 3-4-3

4-3-2. Front Display Pattern

	1G	2G	3G	4G	5G	6G	7G	8G	9G	10G	11G	13G	14G
P1	▶	a	a	a	a	a	a	a	a	a	a	a	A
P2	II	b	b	b	b	b	b	b	b	b	b	b	-B
P3	HDCD	j	j	j	j	j	j	j	j	j	j	j	⟲
P4	DVD	h	h	h	h	h	h	h	h	h	h	h	—
P5	-AUDIO	k	k	k	k	k	k	k	k	k	k	k	—
P6	S	f	f	f	f	f	f	f	f	f	f	f	—
P7	V	g	g	g	g	g	g	g	g	g	g	g	🎥
P8	C	s	s	s	s	s	s	s	s	s	s	s	—
P9	D	m	m	m	m	m	m	m	m	m	m	m	—
P10	VD	c	c	c	c	c	c	c	c	c	c	c	—
P11	—	r	r	r	r	r	r	r	r	r	r	r	—
P12	—	n	n	n	n	n	n	n	n	n	n	n	—
P13	—	p	p	p	p	p	p	p	p	p	p	p	—
P14	—	e	e	e	e	e	e	e	e	e	e	e	—
P15	—	d	d	d	d	d	d	d	d	d	d	d	—
P16	—	t	t	t	t	t	t	t	t	t	t	t	—
P17	—	u	u	u	u	u	u	u	u	u	u	u	—
P18	—	v	v	v	v	v	v	v	v	v	v	v	—
P19	—	w	w	w	w	w	w	w	w	w	w	w	—
P20	—	-		—	—	—	—	col 1		—	—	—	—
P21	—	—	—	-		—	—	—	—	col 2		—	—
P22	—	DISC	TITLE	—	CHP	TRK	—	TOTAL		—	—	RANDOM	
P23	—	—	—	—	—	—	—	—	—	MEMORY		—	—
P24	—	—	GROUP		—	—	—	—	REMAIN		—	—	—

Fig. 3-4-4

4-3-3. Front Display, Power Switch Block Diagram

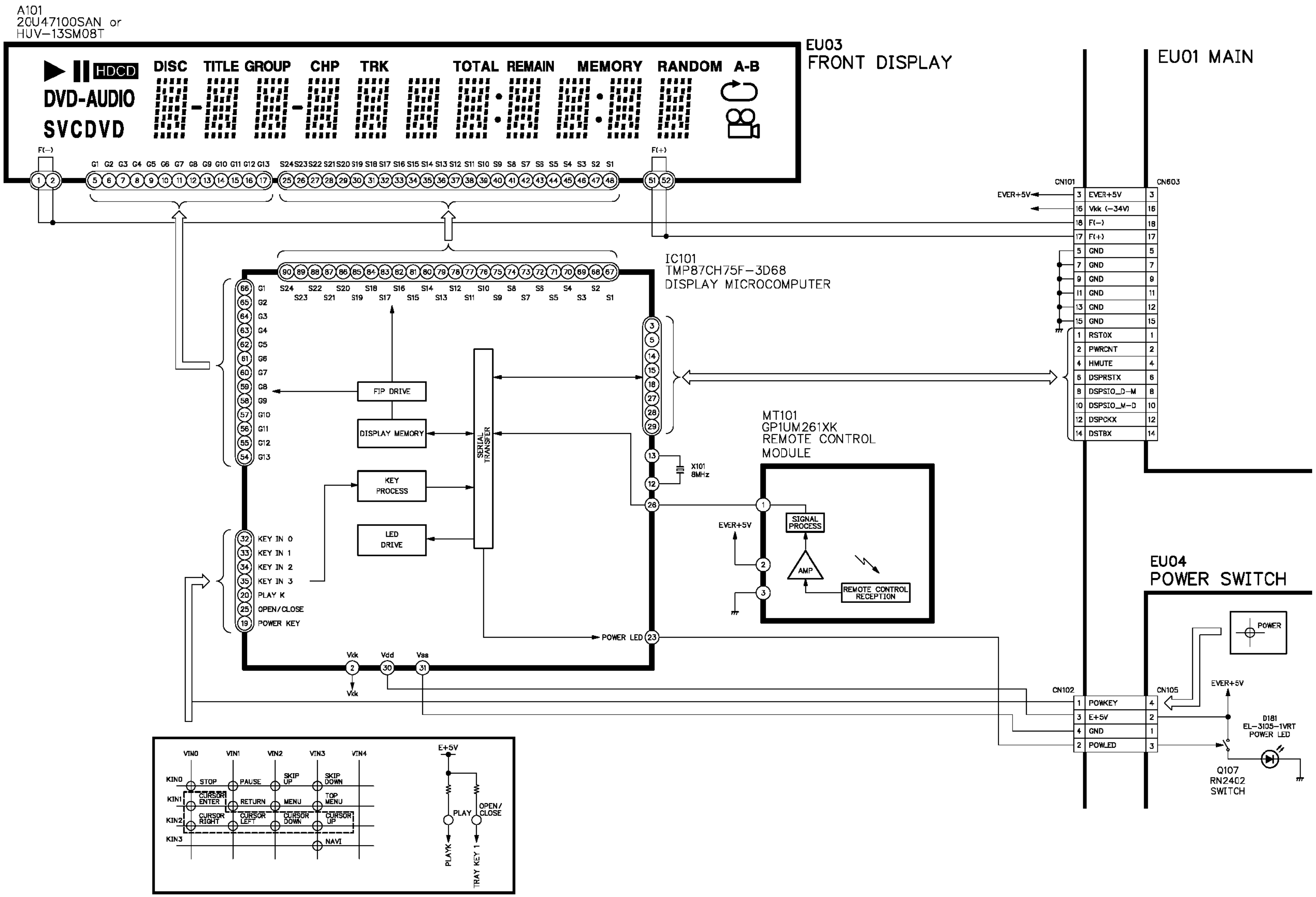

A101
20U47100SAN or
HUV-13SM08T
EU03
FRONT DISPLAY
HDCD
DVD-AUDIO
SVCDVD
DISC
TITLE
GROUP
CHP
TRK
TOTAL
REMAIN
MEMORY
RANDOM
A-B
F(-)
F(+)
G1 G2 G3 G4 G5 G6 G7 G8 G9 G10 G11 G12 G13
S24 S23 S22 S21 S20 S19 S18 S17 S16 S15 S14 S13 S12 S11 S10 S9 S8 S7 S6 S5 S4 S3 S2 S1
IC101
TMP87CH75F-3D68
DISPLAY MICROCOMPUTER
FIP DRIVE
DISPLAY MEMORY
KEY PROCESS
LED DRIVE
SERIAL TRANSFER
KEY IN 0
KEY IN 1
KEY IN 2
KEY IN 3
PLAY K
OPEN/CLOSE
POWER KEY
POWER LED
Vkk
Vdd
Vss
X101
8MHz
MT101
GP1UM261XK
REMOTE CONTROL
MODULE
SIGNAL PROCESS
AMP
REMOTE CONTROL RECEPTION
EVER+5V
EU01 MAIN
CN101
CN603
EVER+5V
Vkk (-34V)
F(-)
F(+)
GND
RSTOX
PWRCNT
HMUTE
DSPRSTX
DSPSIO_D-M
DSPSIO_M-D
DSPCKX
DSTBX
EU04
POWER SWITCH
CN102
CN105
POWKEY
E+5V
GND
POWLED
POWER
D181
EL-3105-1VRT
POWER LED
Q107
RN2402
SWITCH
VIN0 VIN1 VIN2 VIN3 VIN4
KIN0 KIN1 KIN2 KIN3
STOP
PAUSE
SKIP UP
SKIP DOWN
CURSOR ENTER
RETURN
MENU
TOP MENU
CURSOR RIGHT
CURSOR LEFT
CURSOR DOWN
CURSOR UP
NAVI
E+5V
PLAY
OPEN/CLOSE
PLAYK
TRAY KEY 1

Fig. 3-4-5

4-4. Main Block Diagrams

4-4-1. Servo System Block Diagram

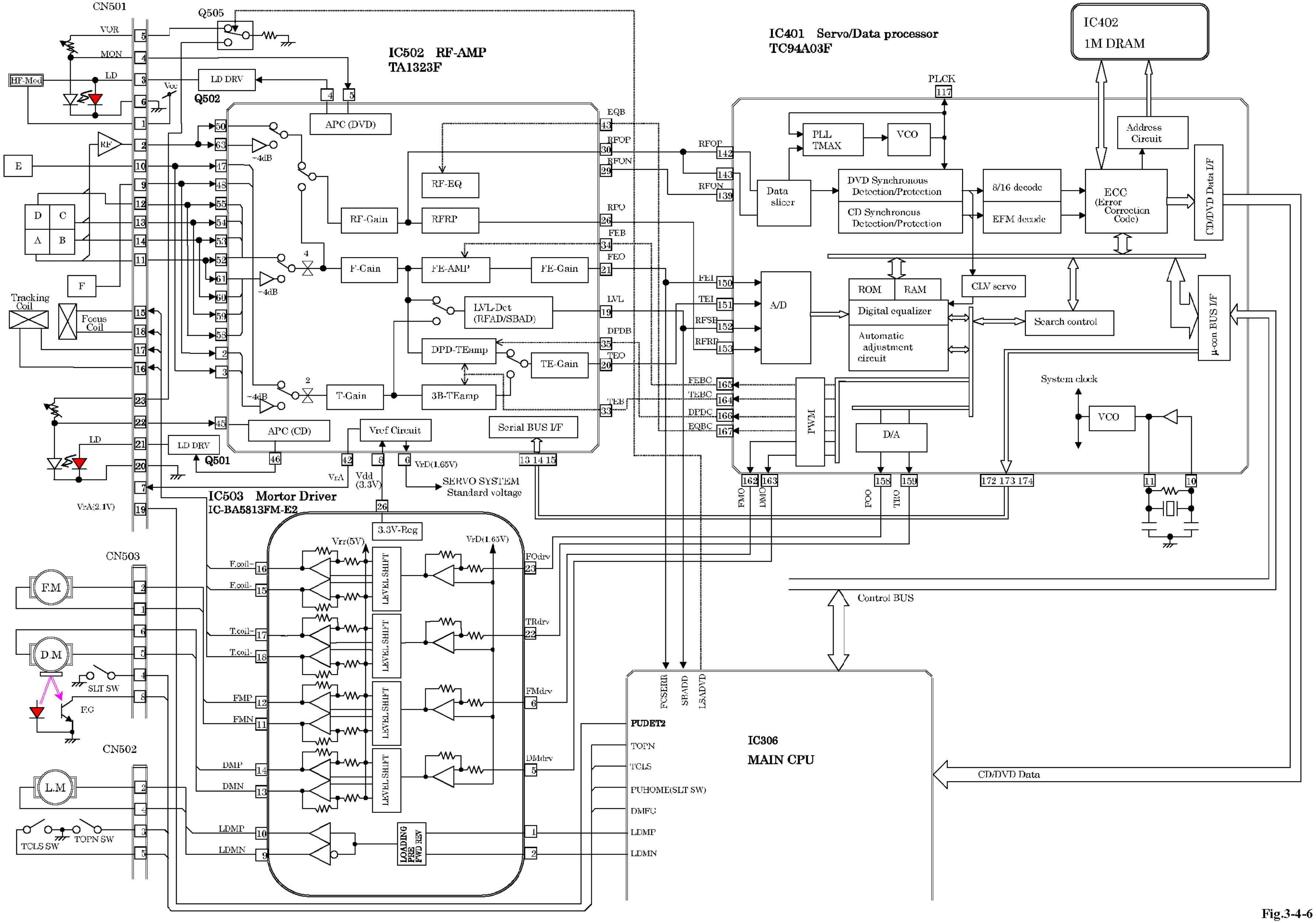

CN501
VOR
MON
LD
HF-Mod
Vcc
RF
E
D
C
A
B
F
Tracking Coil
Focus Coil
LD
V+A(2.1V)
Q505
LD DRV
Q502
APC (DVD)
IC502 RF-AMP
TA1323F
-4dB
RF-EQ
RF-Gain
RFRP
F-Gain
FE-AMP
FE-Gain
LVL-Det
(RFAD/SBAD)
DPD-TEamp
TE-Gain
T-Gain
3B-TEamp
APC (CD)
Vref Circuit
Serial BUS I/F
LD DRV
Q501
VrA
Vdd
(3.3V)
VrD(1.65V)
SERVO SYSTEM
Standard voltage
EQB
RFOP
RFON
RPO
FEB
FEO
LVL
DPDB
TEO
TEB
IC503 Mortor Driver
IC-BA5813FM-E2
3.3V-Reg
Vrr(5V)
VrD(1.65V)
LEVEL SHIFT
LOADING
PRE
FWD REV
F.coil-
F.coil-
T.coil-
T.coil-
FMP
FMN
DMP
DMN
LDMP
LDMN
FOdrv
TRdrv
FMdrv
DMdrv
CN503
F.M
D.M
SLT SW
F.G
CN502
L.M
TCLS SW
TOPN SW
IC401 Servo/Data processor
TC94A03F
PLCK
PLL
TMAX
VCO
Data slicer
DVD Synchronous Detection/Protection
CD Synchronous Detection/Protection
8/16 decode
EFM decode
ECC
(Error Correction Code)
Address Circuit
CD/DVD Data I/F
IC402
1M DRAM
A/D
ROM
RAM
Digital equalizer
Automatic adjustment circuit
CLV servo
Search control
μ-con BUS I/F
PWM
D/A
System clock
VCO
RFOP
RFON
FEI
TEI
RFSB
RFRP
FEBC
TEBC
DPDC
EQBC
FMO
DMO
FOO
TRO
Control BUS
CD/DVD Data
FCSERR
SBADD
LSADVD
PUDET2
TOPN
TCLS
PUHOME(SLT SW)
DMFG
LDMP
LDMN
IC306
MAIN CPU

Fig.3-4-6

4-4-2. Logical System Block Diagram

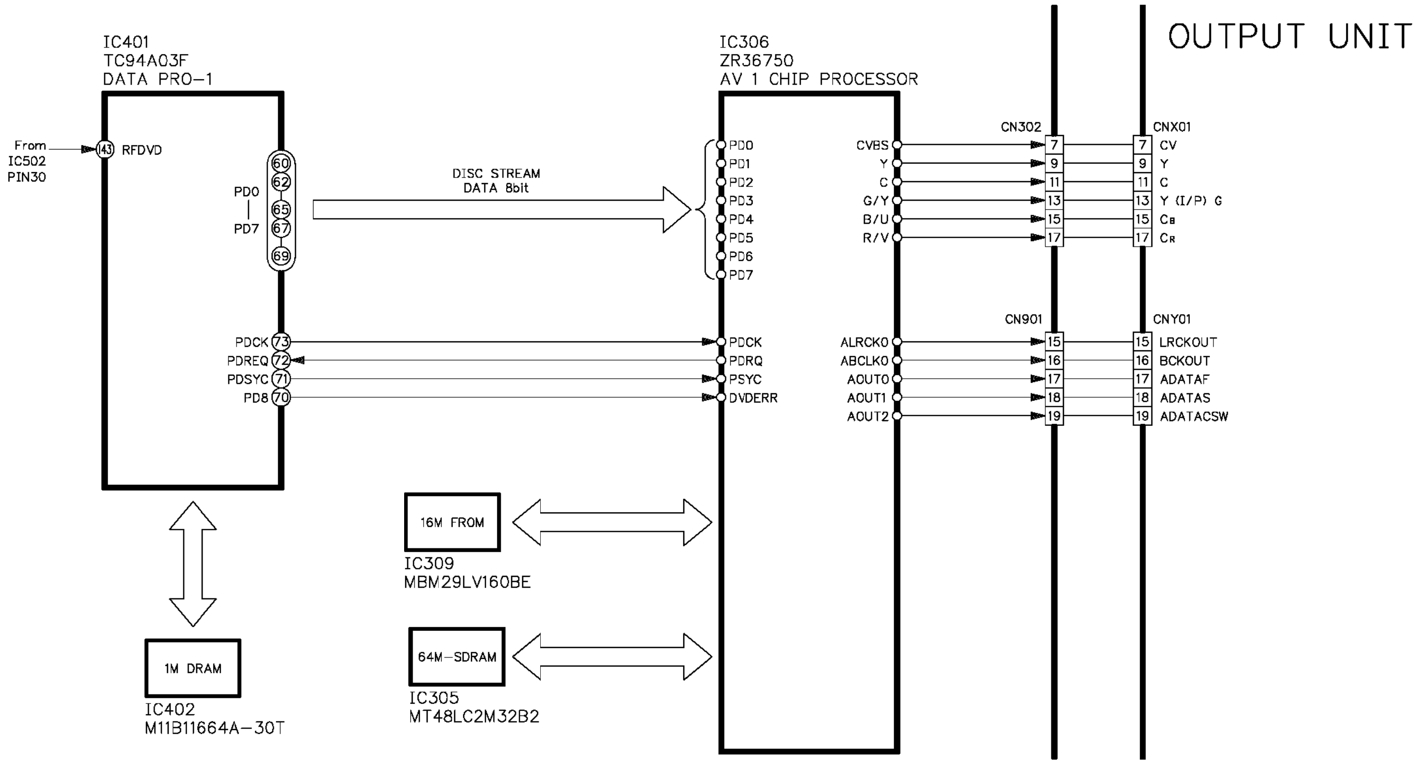

IC401
TC94A03F
DATA PRO-1
From IC502 PIN30
143 RFDVD
PD0 | PD7
60
62
65
67
69
PDCK 73
PDREQ 72
PDSYC 71
PD8 70
DISC STREAM DATA 8bit
1M DRAM
IC402
M11B11664A-30T
16M FROM
IC309
MBM29LV160BE
64M-SDRAM
IC305
MT48LC2M32B2
IC306
ZR36750
AV 1 CHIP PROCESSOR
PD0
PD1
PD2
PD3
PD4
PD5
PD6
PD7
PDCK
PDRQ
PSYC
DVDERR
CVBS
Y
C
G/Y
B/U
R/V
ALRCK0
ABCLK0
AOUT0
AOUT1
AOUT2
CN302
7
9
11
13
15
17
CN901
15
16
17
18
19
CNX01
7 CV
9 Y
11 C
13 Y (I/P) G
15 CB
17 CR
CNY01
15 LRCKOUT
16 BCKOUT
17 ADATAF
18 ADATAS
19 ADATACSW
OUTPUT UNIT

Fig. 3-4-7

4-5. Output Block Diagram

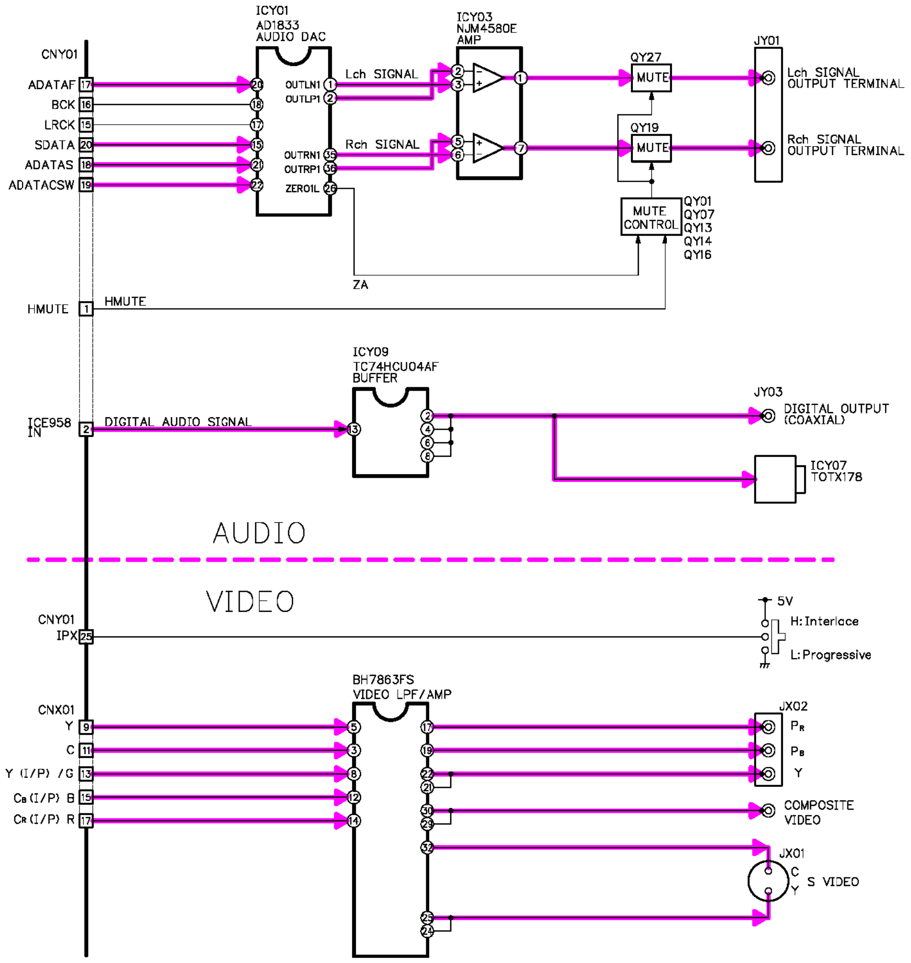

CNY01
ADATAF
BCK
LRCK
SDATA
ADATAS
ADATACSW
ICY01
AD1833
AUDIO DAC
OUTLN1
OUTLP1
OUTRN1
OUTRP1
ZEROIL
Lch SIGNAL
Rch SIGNAL
ICY03
NJM4580E
AMP
QY27
MUTE
QY19
MUTE
MUTE CONTROL
QY01
QY07
QY13
QY14
QY16
JY01
Lch SIGNAL OUTPUT TERMINAL
Rch SIGNAL OUTPUT TERMINAL
ZA
HMUTE
HMUTE
ICY09
TC74HCU04AF
BUFFER
ICE958 IN
DIGITAL AUDIO SIGNAL
JY03
DIGITAL OUTPUT (COAXIAL)
ICY07
TOTX178
AUDIO
VIDEO
CNY01
IPX
5V
H:Interlace
L:Progressive
BH7863FS
VIDEO LPF/AMP
CNX01
Y
C
Y (I/P) /G
CB (I/P) B
CR (I/P) R
JX02
PR
PB
Y
COMPOSITE VIDEO
JX01
C
Y
S VIDEO

Fig. 3-4-8

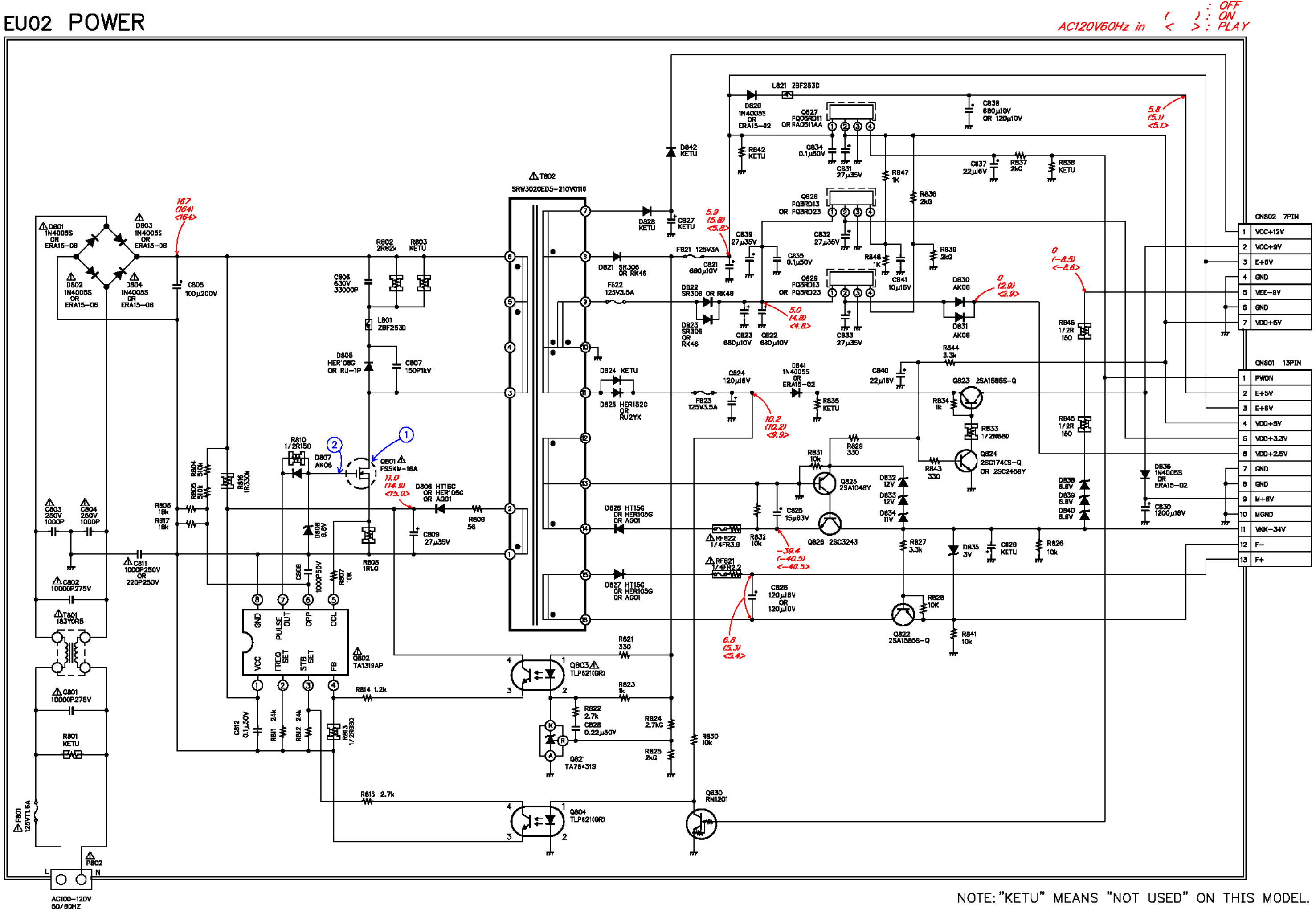
1 2 3 4 5 6 7 8 9 10

A B C D E F G

5. CIRCUIT DIAGRAMS

5-1. Power Supply Circuit Diagram

EU02 POWER


AC120V60Hz in
( ) : OFF
( ) : ON
< > : PLAY
CN802 7PIN
1 VCC+12V
2 VCC+9V
3 E+8V
4 GND
5 VEE-9V
6 GND
7 VDD+5V
CN801 13PIN
1 PWON
2 E+5V
3 E+8V
4 VDD+5V
5 VDD+3.3V
6 VDD+2.5V
7 GND
8 GND
9 M+8V
10 MGND
11 VKK-34V
12 F-
13 F+
T802 SRW3020ED5-210V0110
Q801 FS5KM-18A
Q802 TA1319AP
GND
PULSE OUT
OPP
OCL
VCC
FREQ SET
STB SET
FB
Q803 TLP621(GR)
Q804 TLP621(GR)
Q82 TA76431S
Q822 2SA1585S-Q
Q823 2SA1585S-Q
Q824 2SC1740S-Q OR 2SC2458Y
Q825 2SA1048Y
Q826 2SC3243
Q827 PQ05RD11 OR RA0511AA
Q828 PQ3RD13 OR PQ3RD23
Q829 PQ3RD13 OR PQ3RD23
Q830 RN1201
T801 183Y0R5
F801 125V1.6A
P802
AC100-120V 50/60HZ
D801 1N4005S OR ERA15-06
D802 1N4005S OR ERA15-06
D803 1N4005S OR ERA15-06
D804 1N4005S OR ERA15-06
C801 10000P275V
C802 10000P275V
C803 250V 1000P
C804 250V 1000P
C805 100μ200V
C806 630V 33000P
C807 150P1kV
C811 1000P250V OR 220P250V
R801 KETU
R802 2R82k
R803 KETU
L801 ZBF253D
D805 HER106G OR RU-1P
D807 AK06
D808 HT15G OR HER105G OR AG01
R810 1/2R150
C809 27μ35V
R809 56
F821 125V3A
F822 125V3.5A
F823 125V3.5A
L821 ZBF253D
D821 SR306 OR RK46
D822 SR306 OR RK46
D823 SR306 OR RK46
D824 KETU
D825 HER152G OR RU2YK
D826 HT15G OR HER105G OR AG01
D827 HT15G OR HER105G OR AG01
D828 KETU
D829 1N4005S OR ERA15-02
D830 AK06
D831 AK06
D832 12V
D833 12V
D834 11V
D835 3V
D836 1N4005S OR ERA15-02
D838 6.8V
D839 6.8V
D840 6.8V
D841 1N4005S OR ERA15-02
D842 KETU
RF821 1/4FR2.2
RF822 1/4FR3.9
167 (164) <164>
5.9 (5.8) <5.8>
5.8 (5.1) <5.1>
5.0 (4.8) <4.8>
0 (2.9) <2.9>
0 (-8.5) <-8.6>
10.2 (10.2) <9.9>
-39.4 (-40.5) <-40.5>
6.8 (5.3) <3.4>
11.0 (14.9) <15.0>

NOTE: "KETU" MEANS "NOT USED" ON THIS MODEL.

(V)

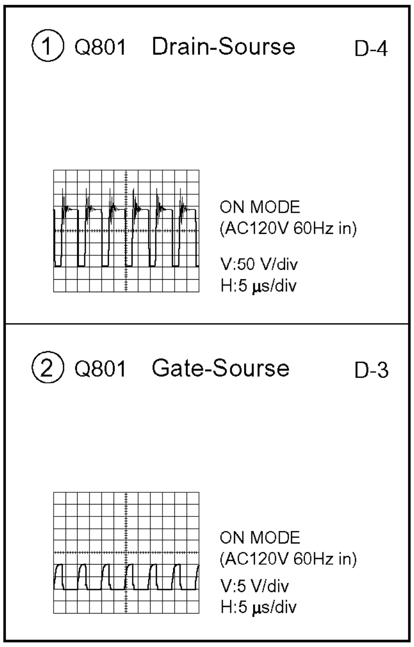
	Q802						Q821			Q822			Q823			Q824			Q825		
	1	2	3	4	6	8	K	R	A	E	C	B	E	C	B	E	C	B	E	C	B
OFF	11.0	1.5	0.5	2.8	1.5	0	3.8	2.5	0	0	-6.8	0	10.0	0	10.0	0	10.0	0	0	-39.0	0
ON	14.9	1.0	1.7	2.0	1.5	0	4.0	2.5	0	-30.3	-30.4	-31.1	9.5	9.4	8.8	0	0.1	0.7	0.7	-40.0	0
PLAY	15.0	1.0	1.7	2.0	1.5	0	4.0	2.5	0	-30.2	-30.3	-31.0	9.1	9.0	8.4	0	0.1	0.7	0.7	-40.0	0

(V)

	Q826			Q827				Q828				Q829				Q830		
	E	C	B	1	2	3	4	1	2	3	4	1	2	3	4	E	C	B
OFF	-39.4	0	-39.0	5.9	5.0	0	0	5.0	3.3	0	0	5.0	3.3	0	0	0	1.0	0
ON	-40.5	-34.0	-40.0	5.8	5.0	0	5.0	4.8	3.3	0	2.5	4.8	3.3	0	2.5	0	0.1	5.0
PLAY	-40.5	-34.0	-40.0	5.8	5.0	0	5.0	4.8	3.3	0	2.5	4.8	3.3	0	2.5	0	0.1	5.0

Fig. 3-5-1

Power Supply Circuit Diagram


① Q801 Drain-Sourse D-4

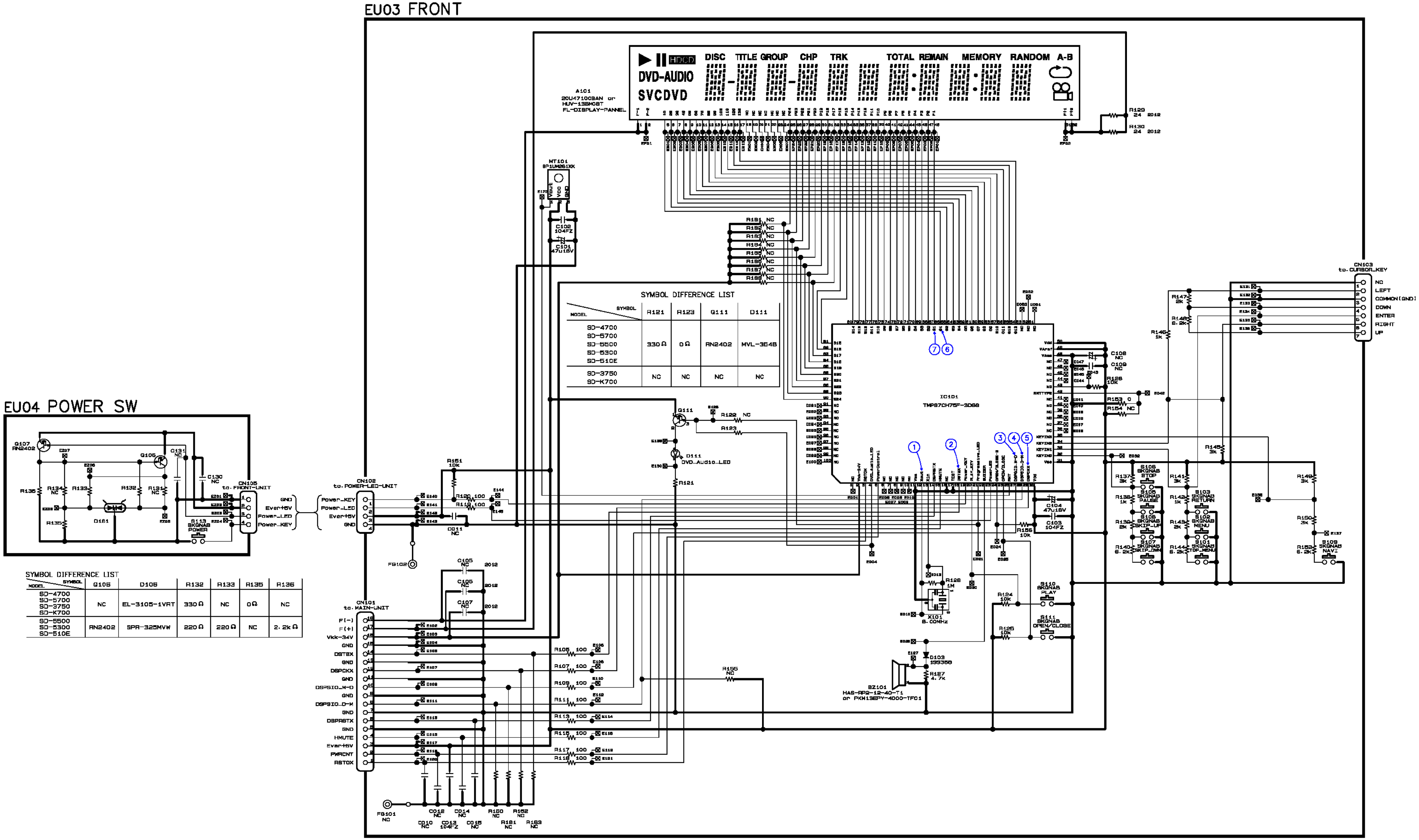
ON MODE
(AC120V 60Hz in)
V:50 V/div
H:5 µs/div

② Q801 Gate-Sourse D-3

ON MODE
(AC120V 60Hz in)
V:5 V/div
H:5 µs/div

Fig. 3-5-2

5-2. Front Display, Power Switch Circuit Diagram


EU03 FRONT
EU04 POWER SW
A101
20U4710GBAN or
HUV-13SM08T
FL-DISPLAY-PANNEL
DISC TITLE GROUP CHP TRK TOTAL REMAIN MEMORY RANDOM A-B
HDCD
DVD-AUDIO
SVCDVD
IC101
TMP87CH75F-3D68
MT101
SP1UM261KK
C102 104FZ
C101 47u16V
R129 24 2012
R130 24 2012
CN103
to. CURSOR_KEY
NC
LEFT
COMMON(GND)
DOWN
ENTER
RIGHT
UP
S106 SKQNAB STOP
S105 SKQNAB PAUSE
S108 SKQNAB SKIP_UP
S107 SKQNAB SKIP_DWN
S103 SKQNAB RETURN
S102 SKQNAB MENU
S101 SKQNAB TOP_MENU
S109 SKQNAB NAVI
S110 SKQNAB PLAY
S111 SKQNAB OPEN/CLOSE
X101 8.00MHz
D103 1SS355
BZ101
HAS-RP2-12-40-T1
or PKM13EPY-4000-TF01
Q111
D111 DVD_Audio_LED
CN102
to. POWER-LED-UNIT
Power_KEY
Power_LED
Ever+5V
GND
CN105
to. FRONT-UNIT
S113 SKQNAB POWER
Q107 RN2402
Q106
D161
CN101
to. MAIN-UNIT
F(-)
F(+)
Vkk-34V
GND
DSTBX
GND
DSPCKX
GND
DSPSIO_M-D
GND
DSPSIO_D-M
GND
DSPRSTX
GND
HMUTE
Ever+5V
PWRCNT
RSTOX
FG101 NC
FG102
1
2
3
4
5
6
7

SYMBOL DIFFERENCE LIST

MODEL \ SYMBOL	R121	R123	Q111	D111
SD-4700 SD-5700 SD-5500 SD-5300 SD-510E	330Ω	0Ω	RN2402	MVL-364B
SD-3750 SD-K700	NC	NC	NC	NC

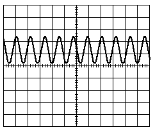
SYMBOL DIFFERENCE LIST

MODEL \ SYMBOL	Q106	D106	R132	R133	R135	R136
SD-4700 SD-5700 SD-3750 SD-K700	NC	EL-3105-1VRT	330Ω	NC	0Ω	NC
SD-5500 SD-5300 SD-510E	RN2402	SPR-325MVW	220Ω	220Ω	NC	2.2kΩ

Fig. 3-5-3

Front Display, Power Switch Circuit Diagram

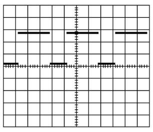
① IC101, Pin ⑫ D-7



X-OUT

V: 2 V/div
H: 100 ns/div

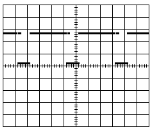
② IC101, Pin ⑱ D-7



STB

V: 2 V/div
H: 5 ms/div

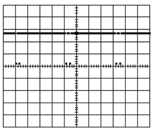
③ IC101, Pin ㉗ D-8



SI

V: 2 V/div
H: 5 ms/div

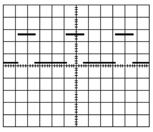
④ IC101, Pin ㉘ D-8



SO

V: 2 V/div
H: 5 ms/div

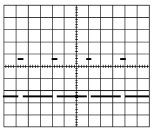
⑤ IC101, Pin ㉙ D-8



SCK

V: 2 V/div
H: 5 ms/div

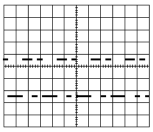
⑥ IC101, Pin (66) C-7



G1

V: 10 V/div
H: 5 ms/div

⑦ IC101, Pin (67) C-7



S1

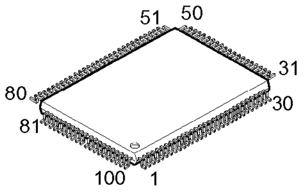
V: 10 V/div
H: 5 ms/div

Fig. 3-5-4

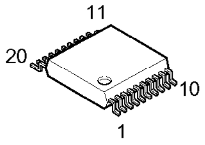
5-3. Main Circuit Diagrams

5-3-1. New Main ICs Information

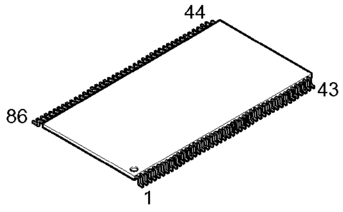
TMP87CH75F


51
50
31
80
30
81
100
1

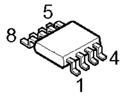
TC74VHCT



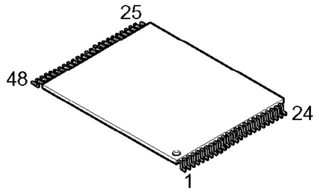
W986432DH



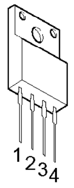
S24C02AFJA



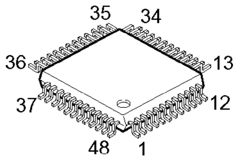
MBM29LV160



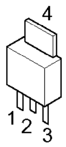
PQ3RD23
PQ05RD11



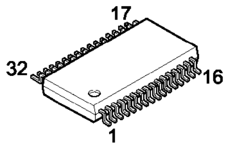
AD1833AST8


35
34
36
13
37
12
48
1

MPC2948T



BH7863



5-3-2. Main Circuit Diagram

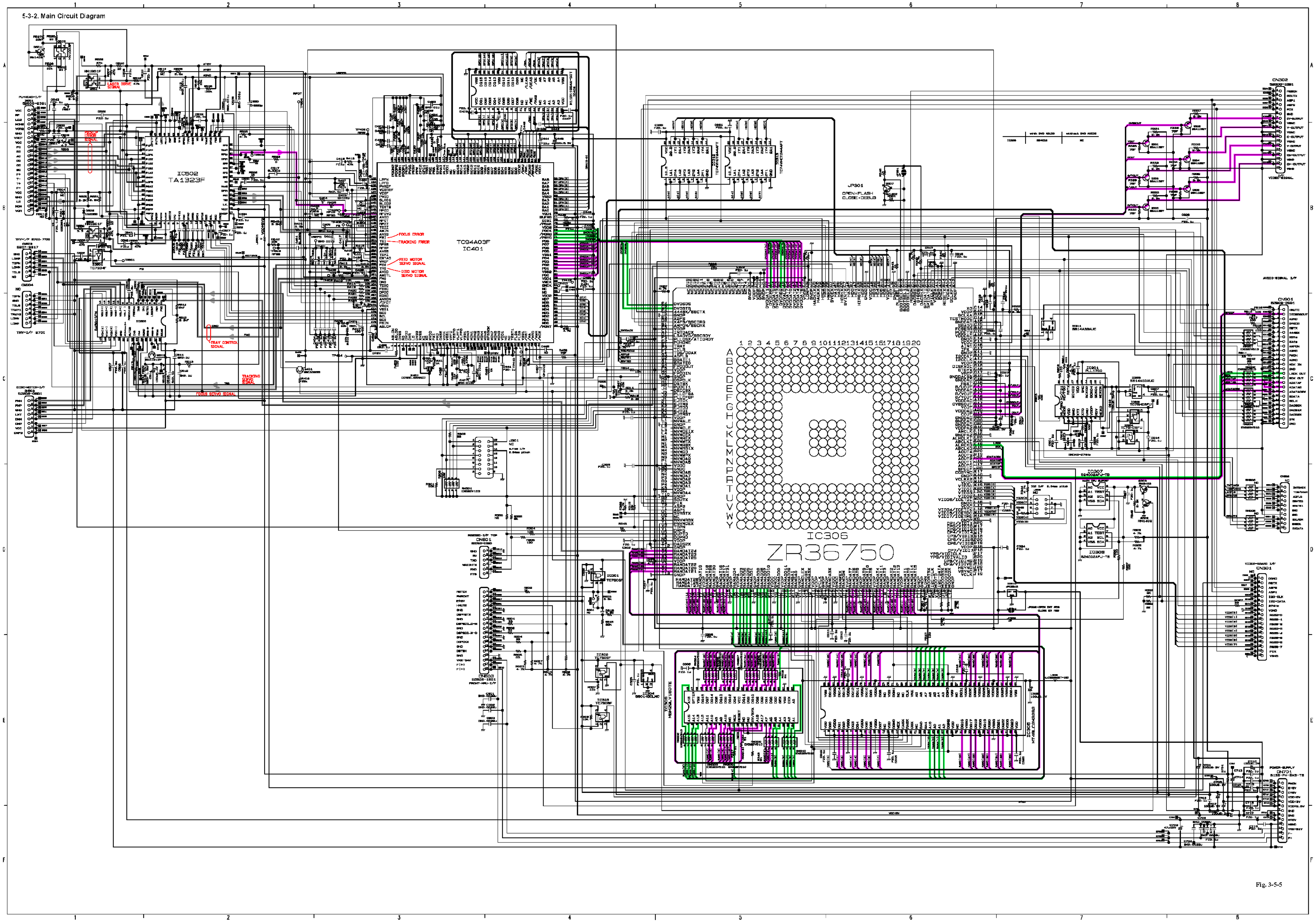
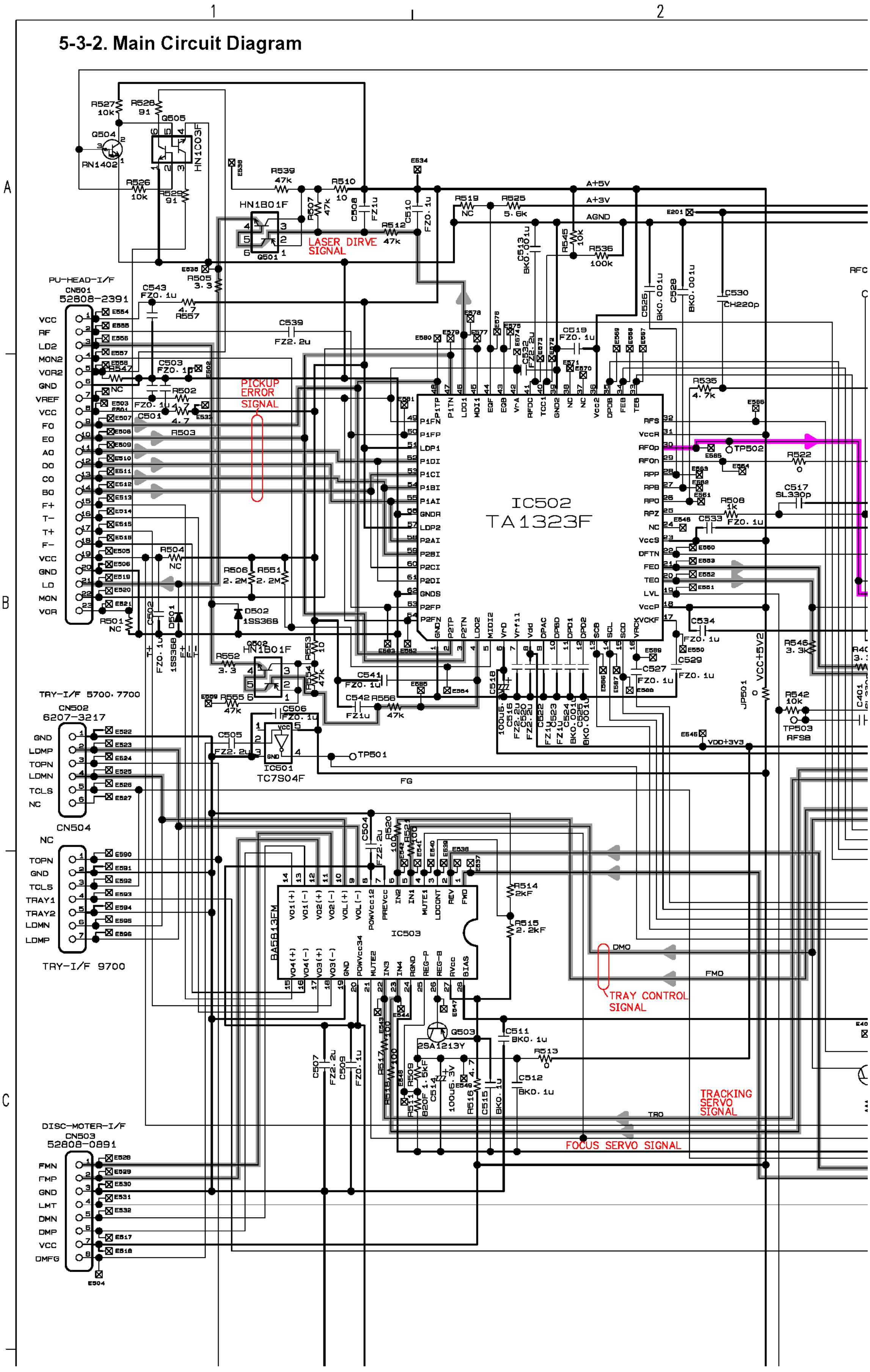
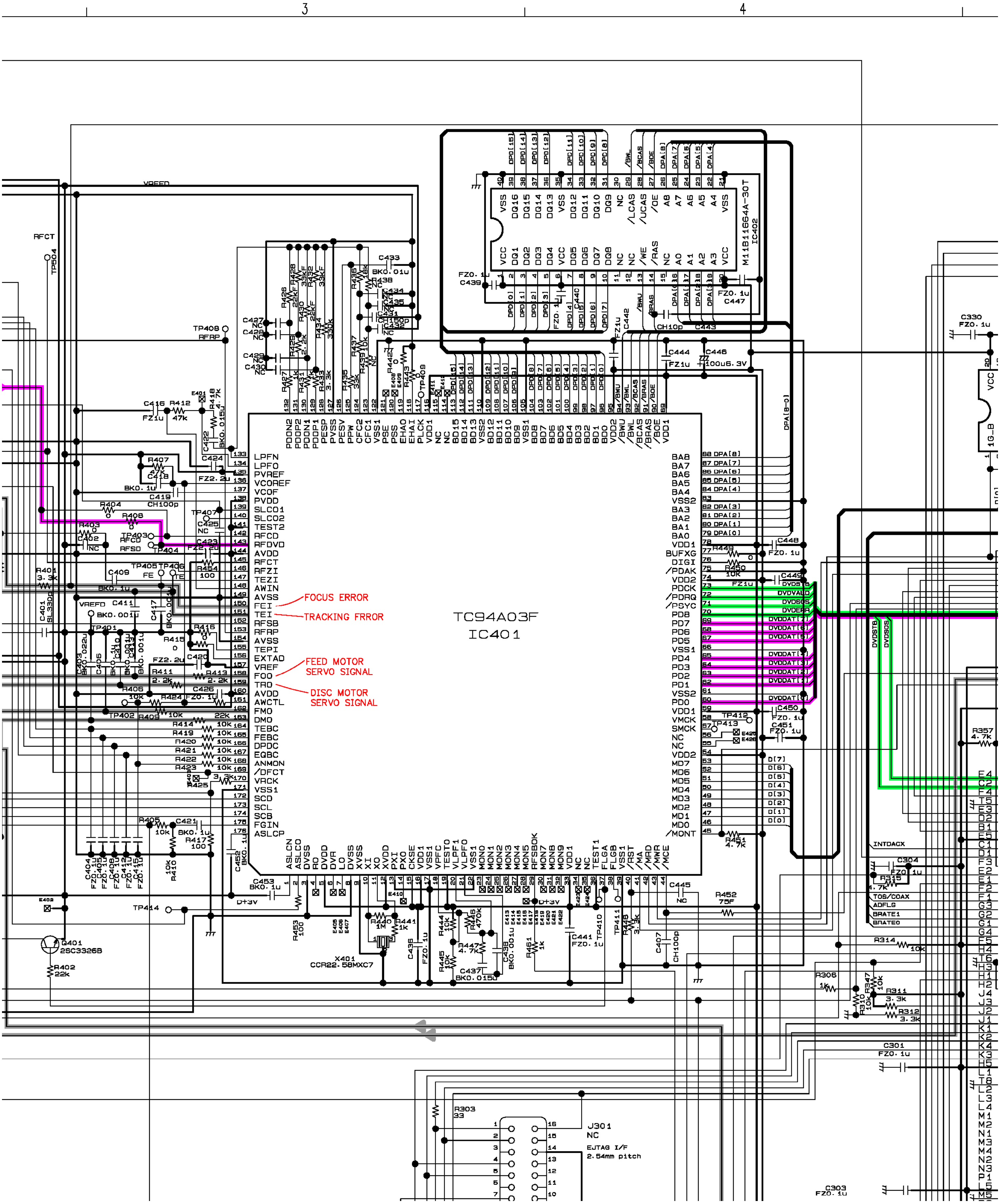
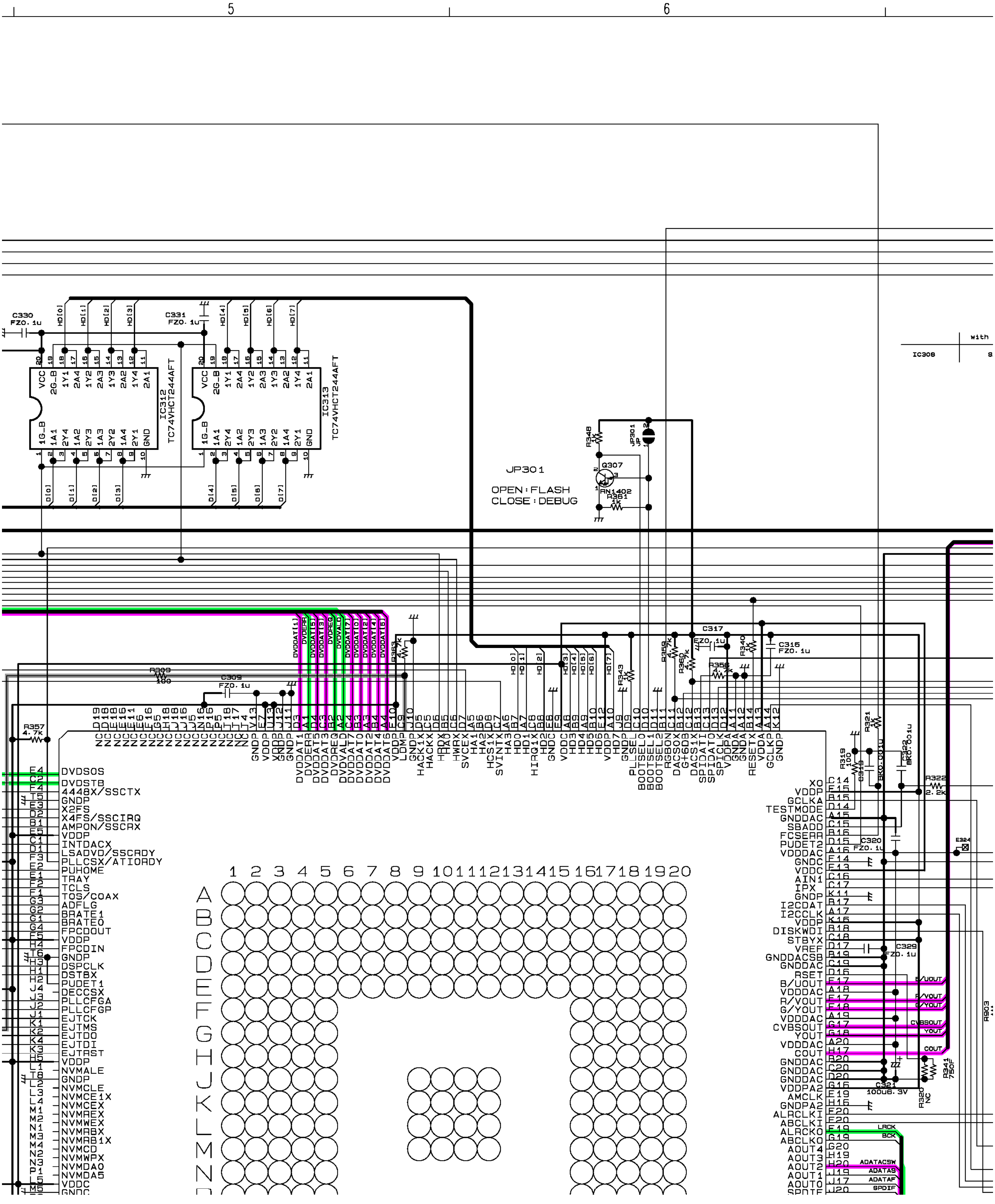

IC502
TA1323F
TC94A03F
IC401
IC306
ZR36750
JP301
OPEN : FLASH
CLOSE : DEBUG
LASER DRIVE SIGNAL
PICKUP ERROR SIGNAL
FOCUS ERROR
TRACKING ERROR
FEED MOTOR SERVO SIGNAL
DISC MOTOR SERVO SIGNAL
TRAY CONTROL SIGNAL
TRACKING SERVO SIGNAL
FOCUS SERVO SIGNAL
CN302
CN901
CN301
CN701
CN601
CN603
AUDIO-SIGNAL I/F
VIDEO-SIGNAL
VIDEO-BOARD I/F
POWER-SUPPLY
FRONT-MAU-I/F
PU-HEAD-I/F
TRY-I/F
DISC-MOTOR-I/F
IC307
IC308
IC305
IC309
MT48LC2M32B2
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
A B C D E F G H J K L M N P R T U V W Y
1
2
3
4
5
6
7
8
A
B
C
D
E
F

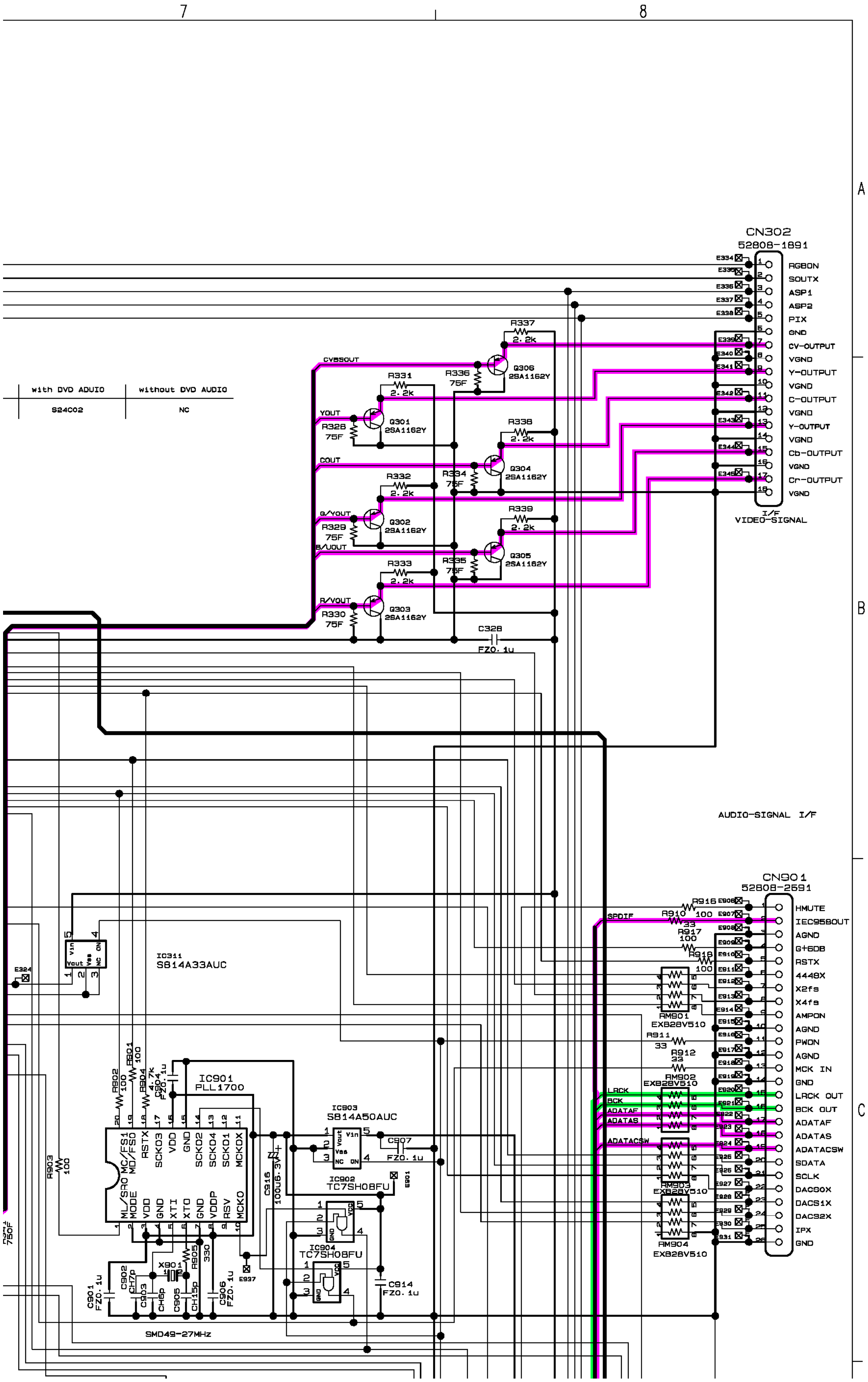
Fig. 3-5-5

5-3-2. Main Circuit Diagram

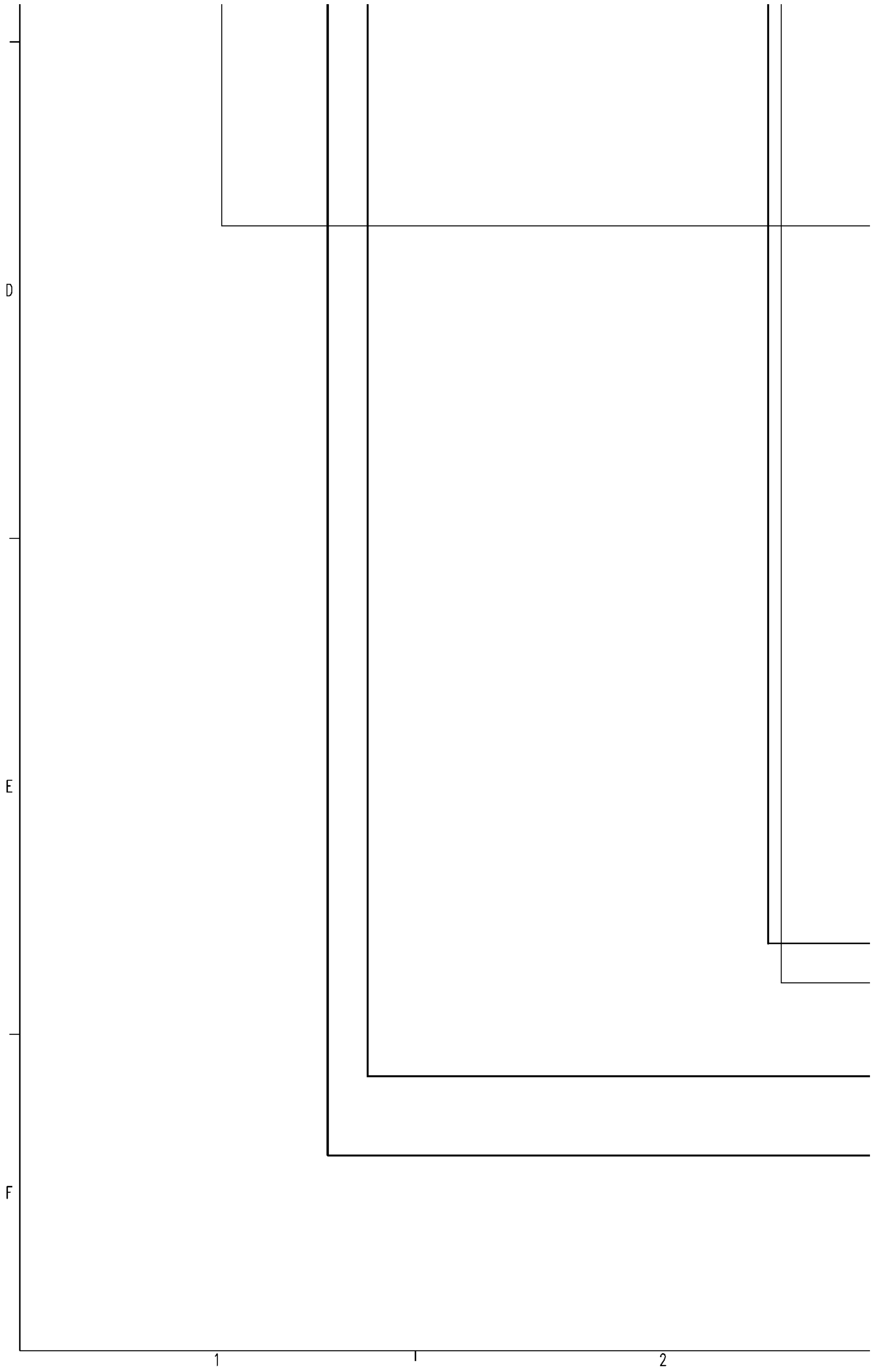

1
2
A
B
C
R527 10k
R528 91
Q504 RN1402
Q505 HN1C03F
R526 10k
R529 91
E538
R539 47k
R510 10
E534
A+5V
A+3V
AGND
HN1B01F
Q501
R507 47k
C508 FZ1u
C510 FZ0.1u
R512 47k
R519 NC
R525 5.6k
E201
LASER DIRVE SIGNAL
R545 10k
R536 100k
C513 BK0.001u
E535
R505 3.3
PU-HEAD-I/F
CN501
52808-2391
C543 FZ0.1u
R557 4.7
VCC
RF
LD2
MON2
VOR2
GND
VREF
VCC
FO
EO
AO
DO
CO
BO
F+
T-
T+
F-
VCC
GND
LD
MON
VOR
E554
E555
E556
E557
E558
R547
NC
E503
E501
E507
E508
E509
E510
E511
E512
E513
E514
E515
E516
E505
E506
E519
E520
E521
C503 FZ0.1u
E502
R502 4.7
C501 FZ0.1u
R503 4.7
E532
C539 FZ2.2u
PICKUP ERROR SIGNAL
R504 NC
R506 2.2M
R551 2.2M
D502 1SS368
R501 NC
C502 FZ0.1u
D501 1SS368
T+ T- F+ F-
IC502
TA1323F
P1FN P1FP LDP1 P1DI P1CI P1BI P1AI GNDA LDP2 P2AI P2BI P2CI P2DI GNDS P2FP P2FN
P1TP P1TN LDO1 MDI1 EQF EQB Vr-A RFDC TCC1 GND2 NC NC Vcc2 DPDB FEB TEB
RFS VccR RFOp RFOn RPP RPB RPO RPZ NC VccS DFTN FEO TEO LVL VccP VCKF
GNDZ P2TP P2TN LDO2 MDI2 VrD Vr-f11 Vdd DPAC DPBD DPD1 DPD2 SCB SCL SCD VRCK
E580 E579 E577 E578 E576 E575 E574 E573 E572 E571 E570 E569 E568 E567 E581
C532 FZ2.2u
C519 FZ0.1u
C526 BK0.001u
C528 BK0.001u
C530 CH220p
RFC
R535 4.7k
E566
TP502
E565
R522
E563 E564 E562 E561
R508 1k
C517 SL330p
E548
C533 FZ0.1u
E560 E553 E552 E551
C534 FZ0.1u
E550
C527 FZ0.1u
C529 FZ0.1u
R546 3.3k
E589 E586 E587 E588
VCC+5V2
JP501
R542 10k
TP503 RFSB
C401
E545
VDD+3V3
E583 E582
Q502 HN1B01F
R552 3.3
R553 10
R554 47k
C541 FZ0.1u
E585 E584
C518
R555 47k
R556 47k
C542 FZ1u
E559
C506 FZ0.1u
C505 FZ2.2u
C516 100u6.3V
C520 FZ2.2u
C522 FZ1u
C523 FZ1u
C524 BK0.001u
C525 BK0.001u
IC501 TC7S04F
VCC GND
TP501
FG
TRY-I/F 5700·7700
CN502
6207-3217
GND LDMP TOPN LDMN TCLS NC
E522 E523 E524 E525 E526 E527
CN504
NC
TOPN GND TCLS TRAY1 TRAY2 LDMN LDMP
E590 E591 E592 E593 E594 E595 E596
TRY-I/F 9700
C504 FZ2.2u
R520 10k
R521 100
E542 E541 E540 E539 E536 E537
IC503
BA5813FM
VO1(+) VO1(-) VO2(+) VO2(-) VOL(+) VOL(-) POWVcc12 PREVcc IN2 IN1 MUTE1 LDCONT REV FWD
VO4(+) VO4(-) VO3(+) VO3(-) GND POWVcc34 MUTE2 IN3 IN4 RGND REG-P REG-B RVcc BIAS
R514 2kF
R515 2.2kF
DMO
FMO
TRAY CONTROL SIGNAL
E543 E544 E547
Q503 2SA1213Y
C511 BK0.1u
R513
C512 BK0.1u
C507 FZ2.2u
C509 FZ0.1u
R517 100
R518 100
R511
R509 820F
C514 100u6.3V
R516 4.7
C515 BK0.1u
E546 E549
TRACKING SERVO SIGNAL
TRO
FOCUS SERVO SIGNAL
DISC-MOTER-I/F
CN503
52808-0891
FMN FMP GND LMT DMN DMP VCC DMFG
E528 E529 E530 E531 E532 E517 E518
E504

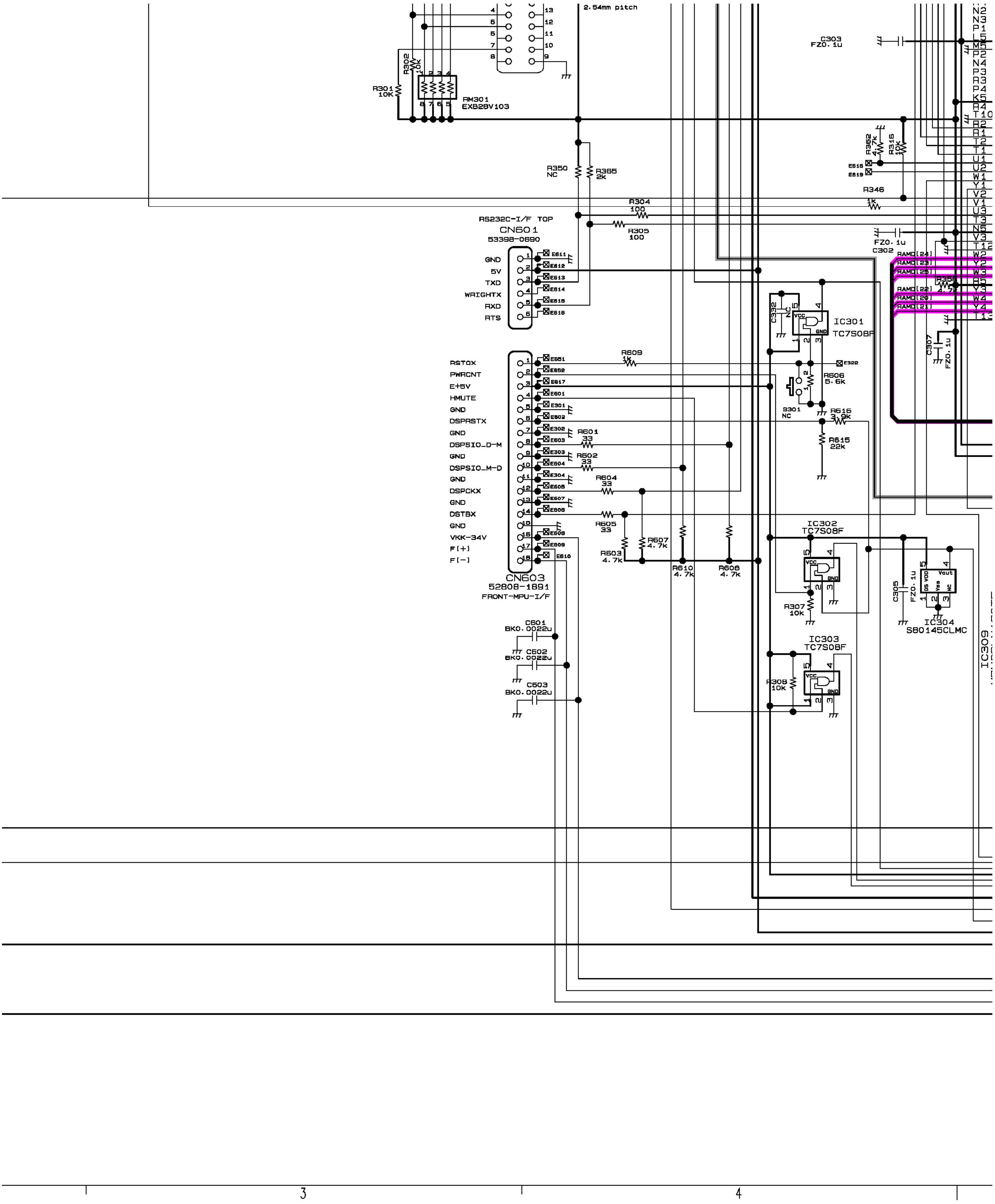

3
4
TC94A03F
IC401
M11B16164A-30T
IC402
FOCUS ERROR
TRACKING FRROR
FEED MOTOR
SERVO SIGNAL
DISC MOTOR
SERVO SIGNAL
VREFD
RFCT
TP504
TP408
RFRP
TP407
TP403
RFCD
RFSD
TP404
TP405
TP406
FE
TE
TP401
TP402
TP409
TP410
TP411
TP412
TP413
TP414
X401
CCR22.58MXC7
Q401
2SC3326B
R402
22k
R401
3.3k
J301
NC
EJTAG I/F
2.54mm pitch
R303
33
C330
FZ0.1u
C301
FZ0.1u
C303
FZ0.1u
C304
FZ0.1u
R314
10k
R306
1k
R347
10k
R310
10k
R311
3.3k
R312
3.3k
R315
4.7k
R357
4.7k
INTDACX
TOS/COAX
ADFLG
BRATE1
BRATE0
DVDSTB
DVDSOS
DVDSTB
DVDVALID
DVDSOS
DVDERR
DVDDAT[7]
DVDDAT[6]
DVDDAT[5]
DVDDAT[4]
DVDDAT[3]
DVDDAT[2]
DVDDAT[1]
DVDDAT[0]
DPA[8-0]
DPA[8]
DPA[7]
DPA[6]
DPA[5]
DPA[4]
DPA[3]
DPA[2]
DPA[1]
DPA[0]
D[7]
D[6]
D[5]
D[4]
D[3]
D[2]
D[1]
D[0]
VSS
DQ16
DQ15
DQ14
DQ13
DQ12
DQ11
DQ10
DQ9
NC
/LCAS
/UCAS
/OE
A8
A7
A6
A5
A4
VCC
DQ1
DQ2
DQ3
DQ4
DQ5
DQ6
DQ7
DQ8
/WE
/RAS
A0
A1
A2
A3
/BWL
/BCAS
/BOE
/BWU
/BRAS
LPFN
LPFO
PVREF
VCOREF
VCOF
PVDD
SLCO1
SLCO2
TEST2
RFCD
RFDVD
AVDD
RFCT
RFZI
TEZI
AWIN
AVSS
FEI
TEI
RFSB
RFRP
AVSS
TEPI
EXTAD
VREF
FOO
TRO
AVDD
AWCTL
FMO
DMO
TEBC
FEBC
DPDC
EQBC
ANMON
/DFCT
VRCK
VSS1
SCD
SCL
SCB
FGIN
ASLCP
PDON2
PDOP2
PDON1
PDOP1
PESP
PVSS
PESV
PPW
CFC2
CFC1
VSS1
PSE
PSS
EHAO
EHAI
PLCK
VDD1
BD15
BD14
BD13
VSS2
BD12
BD11
BD10
BD9
VSS1
BD8
BD7
BD6
BD5
BD4
BD3
BD2
BD1
BD0
VDD2
/BWU
/BWL
/BCAS
/BRAS
/BOE
VDD1
BA8
BA7
BA6
BA5
BA4
VSS2
BA3
BA2
BA1
BA0
VDD1
BUFXG
DIGI
/PDAK
VDD2
PDCK
/PDRQ
/PSYC
PD8
PD7
PD6
PD5
VSS1
PD4
PD3
PD2
PD1
VSS2
PD0
VDD1
VMCK
SMCK
NC
NC
VDD2
MD7
MD6
MD5
MD4
MD3
MD2
MD1
MD0
/MONT
ASLCN
ASLCO
DVSS
RO
DVDD
DVR
LO
DVSS
XVSS
XI
XO
XVDD
PXI
PXO
CKSE
VDD1
VSS1
VPFC
TESTO
VLPF1
VLPF0
VSS1
MON0
MON1
MON2
MON3
MON4
MON5
RFSBOK
MON7
MON8
MON9
VDD1
NC
NC
TEST1
FLGA
FLGB
VSS1
/RST
/MA
/MRD
/MWR
/MCE
D+3V
C433
BK0.01u
C434
C435
C436
C437
BK0.015u
C438
BK0.001u
C439
FZ0.1u
C440
C441
FZ0.1u
C442
FZ1u
C443
CH10p
C444
FZ1u
C445
NC
C446
100u6.3V
C447
FZ0.1u
C448
FZ0.1u
C449
FZ1u
C450
FZ0.1u
C451
FZ0.1u
C452
BK0.1u
C453
BK0.1u
C407
CH100p
C416
FZ1u
C419
CH100p
C421
BK0.1u
C409
BK0.1u
C411
BK0.001u
C401
SL330p
R412
47k
R418
4.7k
R407
47k
R404
R408
R403
R405
10k
R406
10k
R409
10k
R410
10k
R411
2.2k
R413
2.2k
R414
10k
R415
R416
R417
100
R419
10k
R420
10k
R421
10k
R422
10k
R423
10k
R424
22k
R425
3.3k
R440
1M
R441
1k
R444
10k
R445
10k
R446
470k
R447
4.7k
R448
3.3k
R449
R450
10k
R451
4.7k
R452
75F
R453
100
R454
100
R461
1k
E401
E402
E410

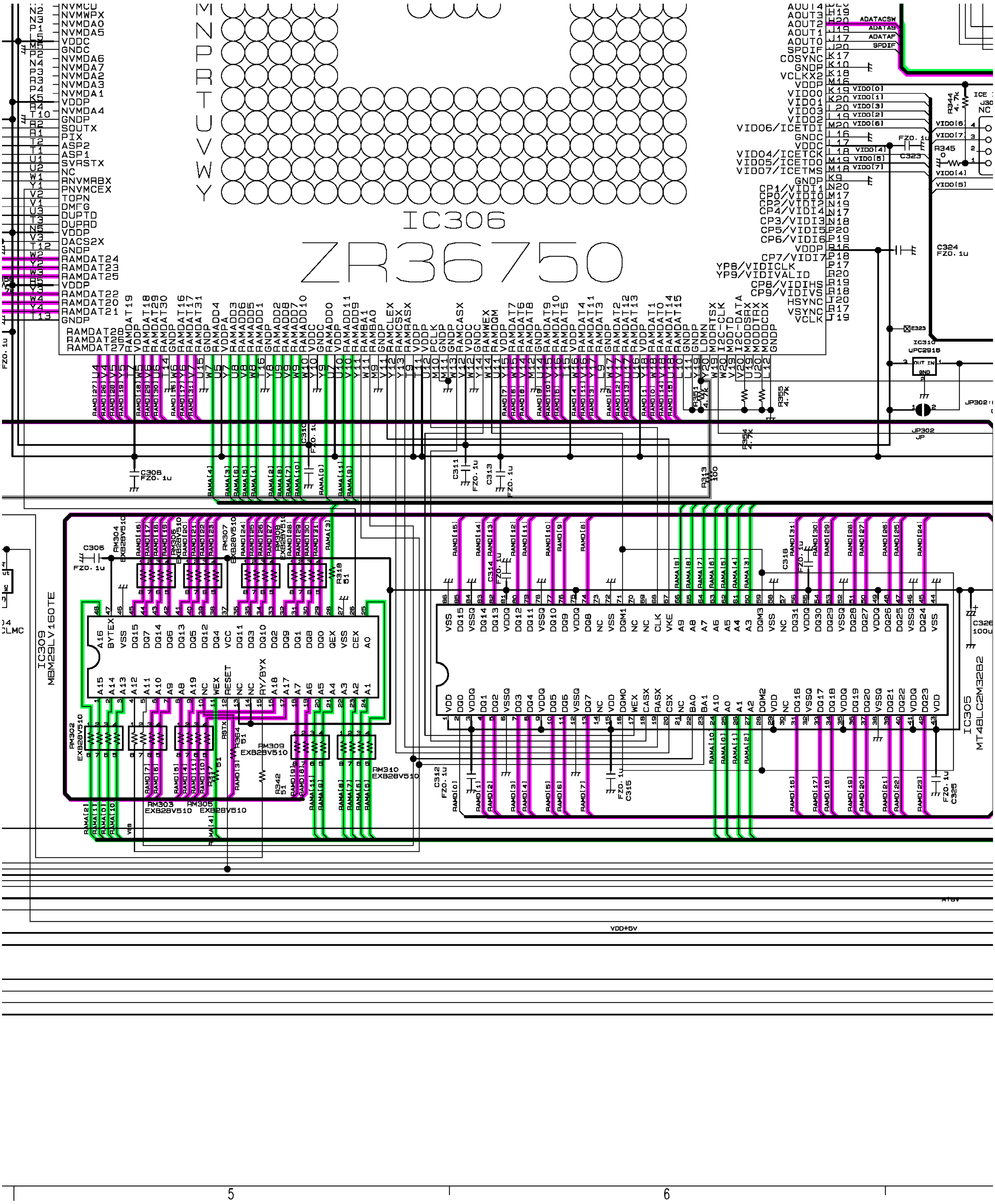

5
6
C330
FZ0.1u
C331
FZ0.1u
HD[0]
HD[1]
HD[2]
HD[3]
HD[4]
HD[5]
HD[6]
HD[7]
VCC
2G_B
1Y1
2A4
1Y2
2A3
1Y3
2A2
1Y4
2A1
1G_B
1A1
2Y4
1A2
2Y3
1A3
2Y2
1A4
2Y1
GND
IC312
TC74VHCT244AFT
IC313
TC74VHCT244AFT
D[0]
D[1]
D[2]
D[3]
D[4]
D[5]
D[6]
D[7]
JP301
OPEN : FLASH
CLOSE : DEBUG
R348
1k
JP301
JP
Q307
RN1402
R351
1k
with
IC308
R309
100
C309
FZ0.1u
R357
4.7k
R353
4.7k
C317
FZ0.1u
R340
1k
C316
FZ0.1u
R359
4.7k
R360
4.7k
R358
4.7k
R343
R319
100
R321
1k
C319
C322
BK0.001u
R322
2.2k
C320
FZ0.1u
C329
FZ0.1u
C321
100u6.3V
R320
NC
R341
75OF
R903
E324
DVDSOS
DVDSTB
4448X/SSCTX
GNDP
X2FS
X4FS/SSCIRQ
AMPON/SSCRX
VDDP
INTDACX
LSADVD/SSCRDY
PLLCSX/ATIORDY
PUHOME
TRAY
TCLS
TOS/COAX
ADFLG
BRATE1
BRATE0
FPCDOUT
VDDP
FPCDIN
GNDP
DSPCLK
DSTBX
PUDET1
DECCSX
PLLCFGA
PLLCFGP
EJTCK
EJTMS
EJTDO
EJTDI
EJTRST
VDDP
NVMALE
GNDP
NVMCLE
NVMCE1X
NVMCEX
NVMREX
NVMWEX
NVMRBX
NVMRB1X
NVMCD
NVMWPX
NVMDA0
NVMDA5
VDDC
GNDC
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
A B C D E F G H J K L M N
DVDDAT1
DVDERR
DVDDAT5
DVDDAT3
DVDREQ
DVDVALD
DVDDAT7
DVDDAT0
DVDDAT2
DVDDAT4
DVDDAT6
VDDP
LDMP
GNDP
HACK1X
HACKX
HRDX
HWRX
SVCEX
HA1
HA2
HCS1X
SVINTX
HA3
HD0
HD1
HIRQ1X
HD2
GNDC
VDDC
HD3
HD4
HD5
HD6
VDDP
HD7
GNDP
PLLSEL
BOOTSEL0
BOOTSEL1
BOOTSEL2
RGBON
DACSOX
G+6DB
DACS1X
SPIDATI
SPIDATO
SPICLK
VDDPA
GNDA
VDDA
RESETX
GCLKP
GNDP
XO
VDDP
GCLKA
TESTMODE
GNDDAC
SBADD
FCSERR
PUDET2
VDDDAC
GNDC
VDDC
AIN1
IPX
GNDP
I2CDAT
I2CCLK
VDDP
DISKWDI
STBYX
VREF
GNDDACSB
GNDDAC
RSET
B/UOUT
VDDDAC
R/VOUT
G/YOUT
VDDDAC
CVBSOUT
YOUT
VDDDAC
COUT
GNDDAC
GNDDAC
GNDDAC
VDDPA2
AMCLK
GNDPA2
ALRCLKI
ABCLKI
ALRCKO
ABCLKO
AOUT4
AOUT3
AOUT2
AOUT1
AOUT0
SPDIF
B/UOUT
R/VOUT
G/YOUT
CVBSOUT
YOUT
COUT
LRCK
BCK
ADATACSW
ADATAS
ADATAF
SPDIF


7
8
A
B
C
CN302
52808-1891
E334
E335
E336
E337
E338
E339
E340
E341
E342
E343
E344
E345
1 RGBON
2 SOUTX
3 ASP1
4 ASP2
5 PIX
6 GND
7 CV-OUTPUT
8 VGND
9 Y-OUTPUT
10 VGND
11 C-OUTPUT
12 VGND
13 Y-OUTPUT
14 VGND
15 Cb-OUTPUT
16 VGND
17 Cr-OUTPUT
18 VGND
I/F
VIDEO-SIGNAL
CVBSOUT
YOUT
COUT
G/YOUT
B/UOUT
R/VOUT
R337
2.2k
Q306
2SA1162Y
R336
75F
R331
2.2k
Q301
2SA1162Y
R328
75F
R338
2.2k
Q304
2SA1162Y
R334
75F
R332
2.2k
Q302
2SA1162Y
R329
75F
R339
2.2k
Q305
2SA1162Y
R335
75F
R333
2.2k
Q303
2SA1162Y
R330
75F
C328
FZ0.1u
AUDIO-SIGNAL I/F
CN901
52808-2591
R916
E906
R910
100
E907
33
R917
100
E908
E909
R918
E910
100
E911
E912
E913
E914
E915
E916
E917
E918
E919
E920
E921
E922
E923
E924
E925
E926
E927
E928
E929
E930
E931
1 HMUTE
2 IEC958OUT
3 AGND
4 G+6DB
5 RSTX
6 444BX
7 X2fs
8 X4fs
9 AMPON
10 AGND
11 PWON
12 AGND
13 MCK IN
14 GND
15 LRCK OUT
16 BCK OUT
17 ADATAF
18 ADATAS
19 ADATACSW
20 SDATA
21 SCLK
22 DACS0X
23 DACS1X
24 DACS2X
25 IPX
26 GND
SPDIF
LRCK
BCK
ADATAF
ADATAS
ADATACSW
RM901
EXB28V510
R911
33
R912
33
RM902
EXB28V510
RM903
EXB28V510
RM904
EXB28V510
E324
IC311
S814A33AUC
Vin
Vout
Vss
NC
ON
IC901
PLL1700
ML/SR0
MODE
VDD
GND
XTI
XTO
GND
VDDP
RSV
MCKO
MC/FS1
MD/FS0
RSTX
SCKO3
VDD
GND
SCKO2
SCKO4
SCKO1
MCKOX
R902
100
R901
100
R904
4.7k
C904
FZ0.1u
R903
100
C901
FZ0.1u
C902
CH7p
C903
CH6p
X901
C905
CH15p
R905
330
C906
FZ0.1u
E937
C916
100U6.3V
IC903
S814A50AUC
C907
FZ0.1u
IC902
TC7SH08FU
E901
IC904
TC7SH08FU
VCC
GND
C914
FZ0.1u
SMD49-27MHz
750F

with DVD ADUIO	without DVD AUDIO
S24C02	NC


D
E
F
1
2


2.54mm pitch
R302 10K
R301 10K
RM301 EXB28V103
R350 NC
R365 2k
R304 100
R305 100
RS232C-I/F TOP
CN601
53398-0690
GND
5V
TXD
WRIGHTX
RXD
RTS
E611
E612
E613
E614
E615
E616
C303 FZ0.1u
R362 4.7k
R316 10K
E518
E519
R346 1k
FZ0.1u
C302
RAM0[24]
RAM0[23]
RAM0[25]
RAM0[22]
RAM0[20]
RAM0[21]
R369 4.7k
C307 FZ0.1u
N2
N3
P1
L5
M5
P2
N4
P3
R3
P4
K5
R4
T10
R2
R1
T2
T1
U1
U2
W1
Y1
V2
V1
U3
T3
N5
V3
T12
W2
Y2
W3
Y3
W4
Y4
C332
NC
IC301
TC7S08F
VCC
GND
E322
R609 1k
R606 5.6k
S301 NC
R616 3.9k
R615 22k
RSTOX
PWRCNT
E+5V
HMUTE
GND
DSPRSTX
GND
DSPSIO_D-M
GND
DSPSIO_M-D
GND
DSPCKX
GND
DSTBX
GND
VKK-34V
F(+)
F(-)
E651
E652
E617
E601
E301
E602
E302
E603
E303
E604
E304
E605
E607
E606
E608
E609
E610
R601 33
R602 33
R604 33
R605 33
R603 4.7k
R607 4.7k
R610 4.7k
R608 4.7k
CN603
52808-1891
FRONT-MPU-I/F
IC302
TC7S08F
R307 10K
C305 FZ0.1u
IC304
S80145CLMC
DS VDD
Vout
Vss
NC
IC303
TC7S08F
R308 10K
IC309
C601 BK0.0022u
C502 BK0.0022u
C503 BK0.0022u
3
4


IC306
ZR36750
NVMCU
NVMWPX
NVMDA0
NVMDA5
VDDC
GNDC
NVMDA6
NVMDA7
NVMDA2
NVMDA3
NVMDA1
VDDP
NVMDA4
GNDP
SOUTX
PIX
ASP2
ASP1
SVRSTX
NC
RNVMRBX
PNVMCEX
TOPN
DMFG
DUPTD
DUPRD
DACS2X
RAMDAT24
RAMDAT23
RAMDAT25
RAMDAT22
RAMDAT20
RAMDAT21
RAMDAT28
RAMDAT26
RAMDAT27
AOUT3
AOUT2
AOUT1
AOUT0
SPDIF
COSYNC
VCLKX2
VIDO0
VIDO1
VIDO3
VIDO2
VIDO6/ICETDI
VIDO4/ICETCK
VIDO5/ICETDO
VIDO7/ICETMS
CP1/VIDI1
CP0/VIDI0
CP2/VIDI2
CP4/VIDI4
CP3/VIDI3
CP5/VIDI5
CP6/VIDI6
CP7/VIDI7
YP8/VIDICLK
YP9/VIDIVALID
CP8/VIDIHS
CP9/VIDIVS
HSYNC
VCLK
ADATACSW
ADATAS
ADATAF
SPDIF
ICE
J30
NC
R344 4.7k
R345
C323
FZ0.1u
C324 FZ0.1u
E323
IC310 UPC2918
OUT IN GND
JP302 JP
R351 4.7k
R354 4.7k
R355 4.7k
R313 100
C308 FZ0.1u
C310 FZ0.1u
C311 FZ0.1u
C313 FZ0.1u
C305 FZ0.1u
RM304 EXB28V510
RM306 EXB28V510
RM307 EXB28V510
RM308 EXB28V510
R318 51
IC309
MBM29LV160TE
A16 BYTEX VSS DQ15 DQ7 DQ14 DQ6 DQ13 DQ5 DQ12 DQ4 VCC DQ11 DQ3 DQ10 DQ2 DQ9 DQ1 DQ8 DQ0 OEX VSS CEX A0
A15 A14 A13 A12 A11 A10 A9 A8 A19 NC WEX RESET NC NC RY/BYX A18 A17 A7 A6 A5 A4 A3 A2 A1
RM302 EXB28V510
RM303 EXB28V510
RM305 EXB28V510
RM309 EXB28V510
RM310 EXB28V510
R364 51
R317 51
R342 51
IC305
MT48LC2M32B2
VSS DQ15 VSSQ DQ14 DQ13 VDDQ DQ12 DQ11 VSSQ DQ10 DQ9 VDDQ DQ8 NC VSS DQM1 NC NC CLK VKE A9 A8 A7 A6 A5 A4 A3 DQM3 VSS NC DQ31 VDDQ DQ30 DQ29 VSSQ DQ28 DQ27 VDDQ DQ26 DQ25 VSSQ DQ24 VSS
VDD DQ0 VDDQ DQ1 DQ2 VSSQ DQ3 DQ4 VDDQ DQ5 DQ6 VSSQ DQ7 NC VDD DQM0 WEX CASX RASX CSX NC BA0 BA1 A10 A0 A1 A2 DQM2 VDD NC DQ16 VSSQ DQ17 DQ18 VDDQ DQ19 DQ20 VSSQ DQ21 DQ22 VDDQ DQ23 VDD
C314 FZ0.1u
C318 FZ0.1u
C312 FZ0.1u
C315 FZ0.1u
C325 FZ0.1u
C326 100u
C304
CLMC
RAMA[0] RAMA[1] RAMA[2] RAMA[3] RAMA[4] RAMA[5] RAMA[6] RAMA[7] RAMA[8] RAMA[9] RAMA[10] RAMA[11]
RAMD[0] … RAMD[31]
VDD+5V
5
6

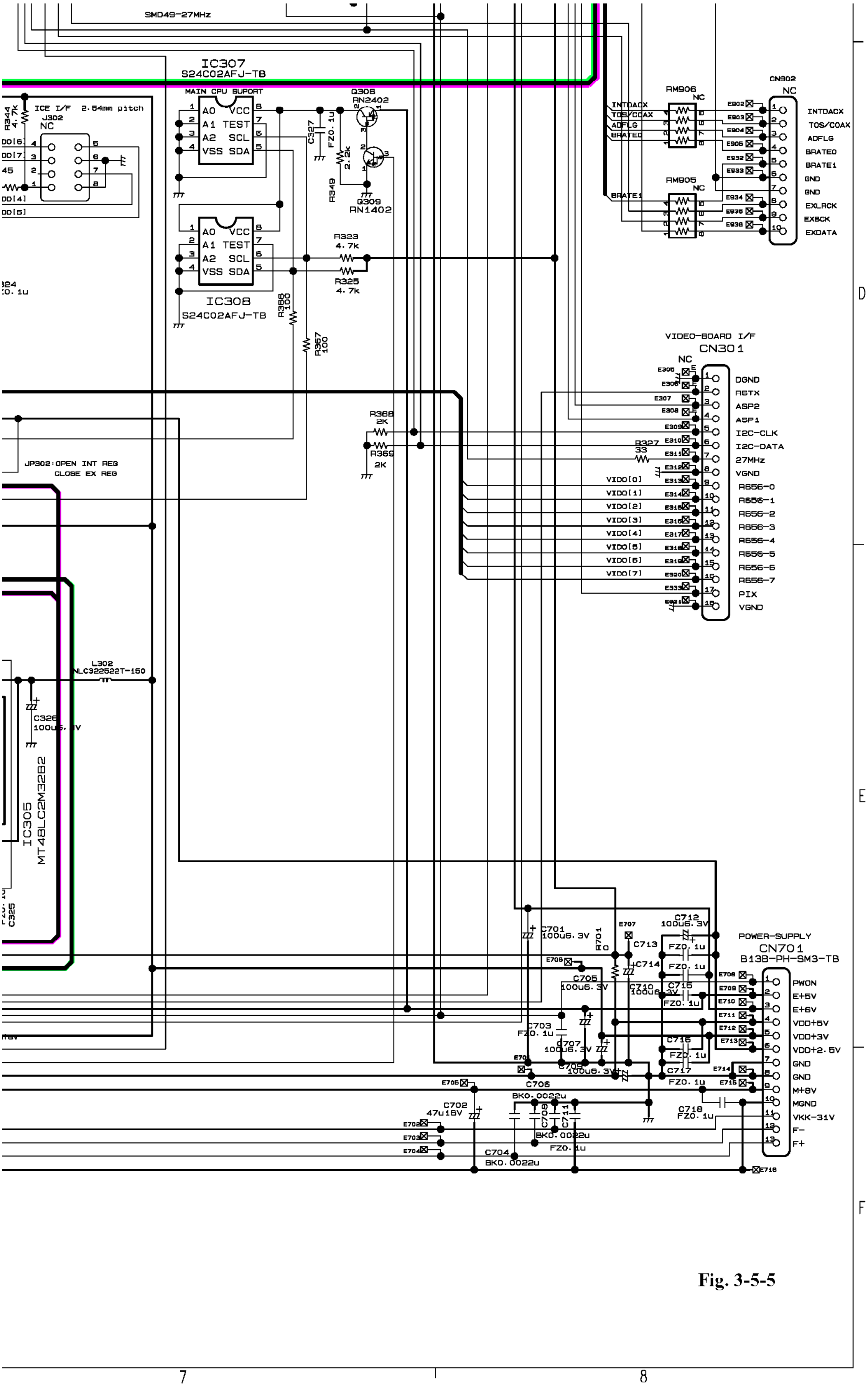
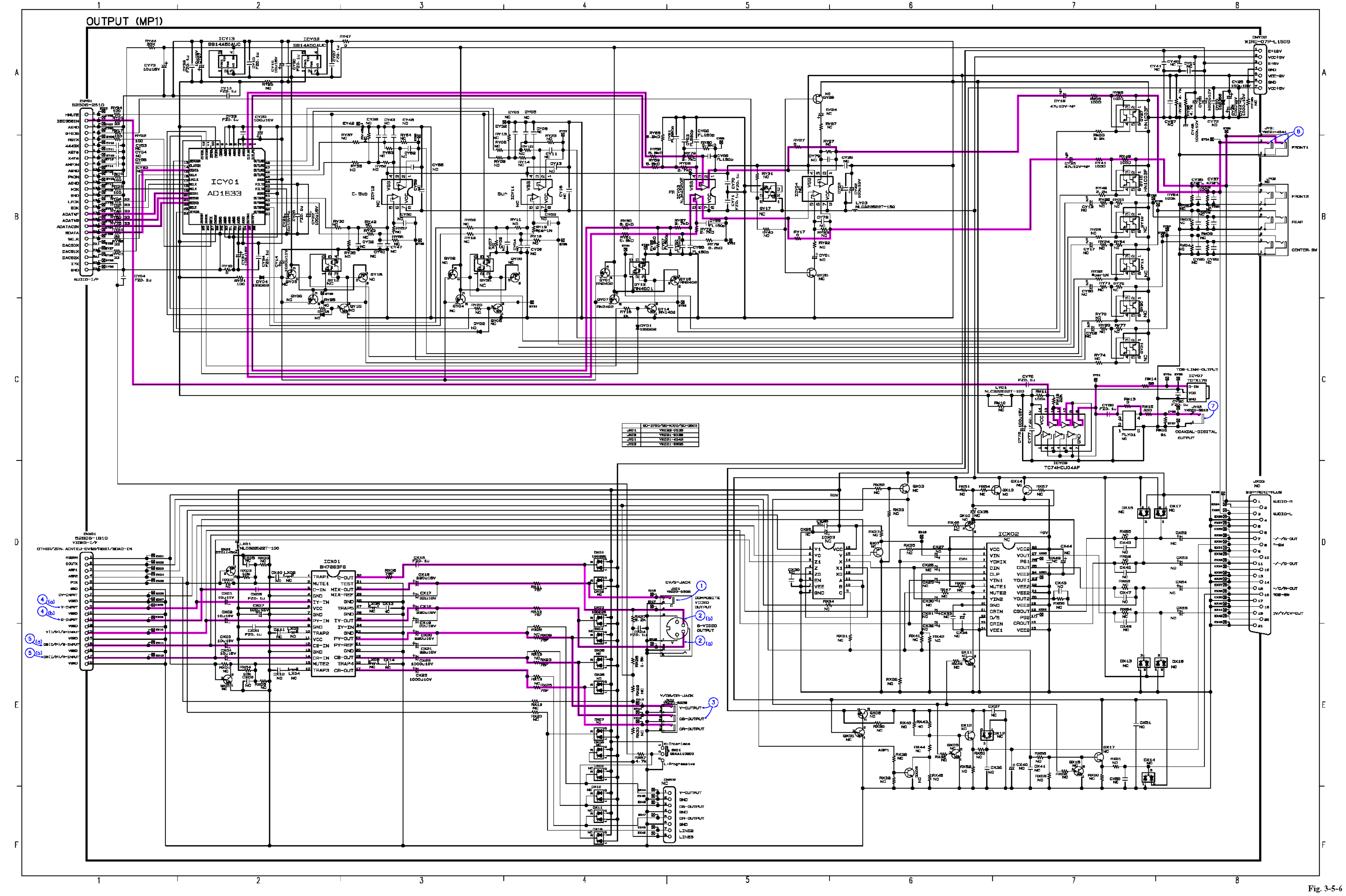

SMD49-27MHz
IC307
S24C02AFJ-TB
MAIN CPU SUPORT
A0 VCC
A1 TEST
A2 SCL
VSS SDA
Q308
RN2402
C327
FZ0.1u
R349
2.2k
Q309
RN1402
R344
4.7k
ICE I/F 2.54mm pitch
J302
NC
IC308
S24C02AFJ-TB
R323
4.7k
R325
4.7k
R366
100
R367
100
RM906
NC
RM905
NC
INTDACX
TOS/COAX
ADFLG
BRATE0
BRATE1
CN902
NC
INTDACX
TOS/COAX
ADFLG
BRATE0
BRATE1
GND
GND
EXLRCK
EXBCK
EXDATA
VIDEO-BOARD I/F
CN301
NC
DGND
RSTX
ASP2
ASP1
I2C-CLK
I2C-DATA
27MHz
VGND
R656-0
R656-1
R656-2
R656-3
R656-4
R656-5
R656-6
R656-7
PIX
VGND
R368
2K
R369
2K
R327
33
VIDO[0]
VIDO[1]
VIDO[2]
VIDO[3]
VIDO[4]
VIDO[5]
VIDO[6]
VIDO[7]
JP302:OPEN INT REG
CLOSE EX REG
L302
NLC322522T-150
C326
100u6.3V
IC305
MT48LC2M32B2
C325
POWER-SUPPLY
CN701
B13B-PH-SM3-TB
PWON
E+5V
E+6V
VDD+5V
VDD+3V
VDD+2.5V
GND
GND
M+8V
MGND
VKK-31V
F-
F+
C701
100u6.3V
R701
0
C712
100u6.3V
C713
FZ0.1u
C714
FZ0.1u
C705
100u6.3V
C710
100u6.3V
C715
FZ0.1u
C703
FZ0.1u
C707
100u6.3V
C716
FZ0.1u
C709
100u6.3V
C717
FZ0.1u
C706
BK0.0022u
C702
47u16V
C708
C711
BK0.0022u
FZ0.1u
C718
FZ0.1u
C704
BK0.0022u
D
E
F
7
8

Fig. 3-5-5

5-4. Output Circuit Diagram

Note that the output circuit has two types.

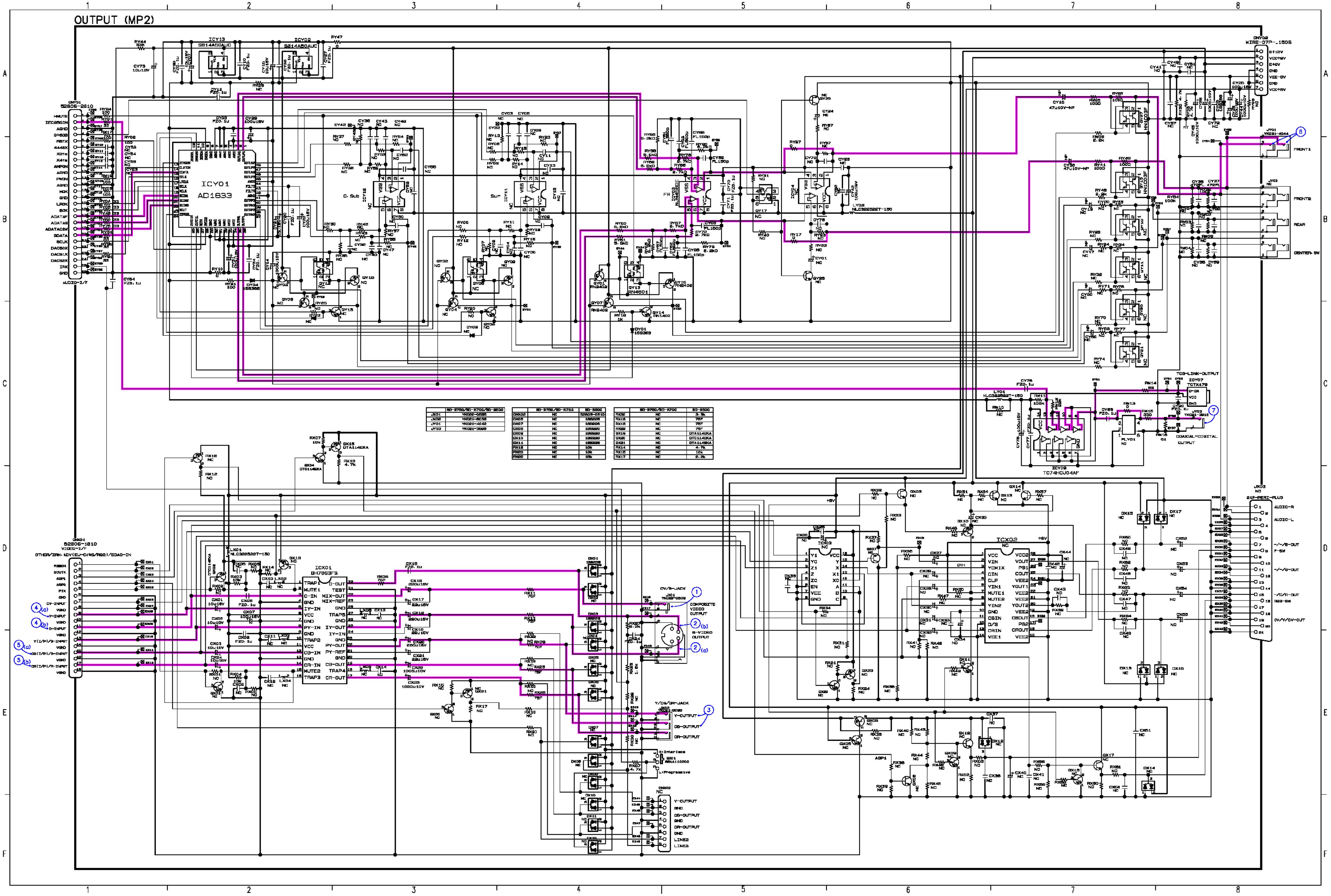
5-4-1. Output Circuit Diagram (No. 9823128700)


OUTPUT (MP1)
ICY01
AD1833
ICY13
BS14A50AUC
ICY02
BS14A50AUC
CNY01
52806-2510
AUDIO-I/F
CNY02
WIRE-07P-L150S
FRONT1
FRONT2
REAR
CENTER-SW
LY03
NLC322522T-150
TOS-LINK-OUTPUT
ICY07
TOTX178
COAXIAL-DIGITAL
OUTPUT
ICY08
TC74HCU04AF
CNX01
52806-1810
VIDEO-I/F
ICX01
BH7868FS
ICX02
ICX03
CVBS-JACK
COMPOSITE
VIDEO
OUTPUT
S-VIDEO
OUTPUT
Y/CB/CR-JACK
Y-OUTPUT
CB-OUTPUT
CR-OUTPUT
H:Interlace
L:Progressive
JX03
21P-RGB-PLUG
AUDIO-R
AUDIO-L
1
2
3
4
5
6
7
8
A
B
C
D
E
F

	SD-3750/SD-K700/SD-3800
JX01	YKC22-0535
JX02	YKC21-3038
JY01	YKC21-4042
JY02	YKC21-3895

Fig. 3-5-6

5-4-2. Output Circuit Diagram (No. 9823128701)


OUTPUT (MP2)
ICY01 AD1833
ICY13 SI14ABDAUC
ICY02 SI14ABDAUC
ICX01 BH7863FS
ICX02
ICX03
ICY09 TC74HCU04AF
ICY07 TCTX179
CNY01 52806-2610
CNY02 WIRE-07P-150S
CNX01 52806-1810
JX03 21P-PERI-PLUG
FRONT1
FRONT2
REAR
CENTER-SW
TOS-LINK-OUTPUT
COAXIAL-DIGITAL OUTPUT
COMPOSITE VIDEO OUTPUT
S-VIDEO OUTPUT
Y/CB/CR-JACK
Y-OUTPUT
CB-OUTPUT
CR-OUTPUT
AUDIO-R
AUDIO-L
C. Sub
Sur
1
2
3
4
5
6
7
8
A
B
C
D
E
F

	SD-3750/SD-K700/SD-3500
JX01	YKC22-0585
JX02	YKC21-6038
JY01	YKC21-4042
JY03	YKC21-3885

	SD-3750/SD-K700	SD-3500
CNX02	NC	52806-0810
DX05	NC	1SS226
DX07	NC	1SS226
DX08	NC	1SS226
DX09	NC	1SS226
DX10	NC	1SS226
DX11	NC	1SS226
RX19	NC	10k
RX20	NC	10k
RX28	NC	15k

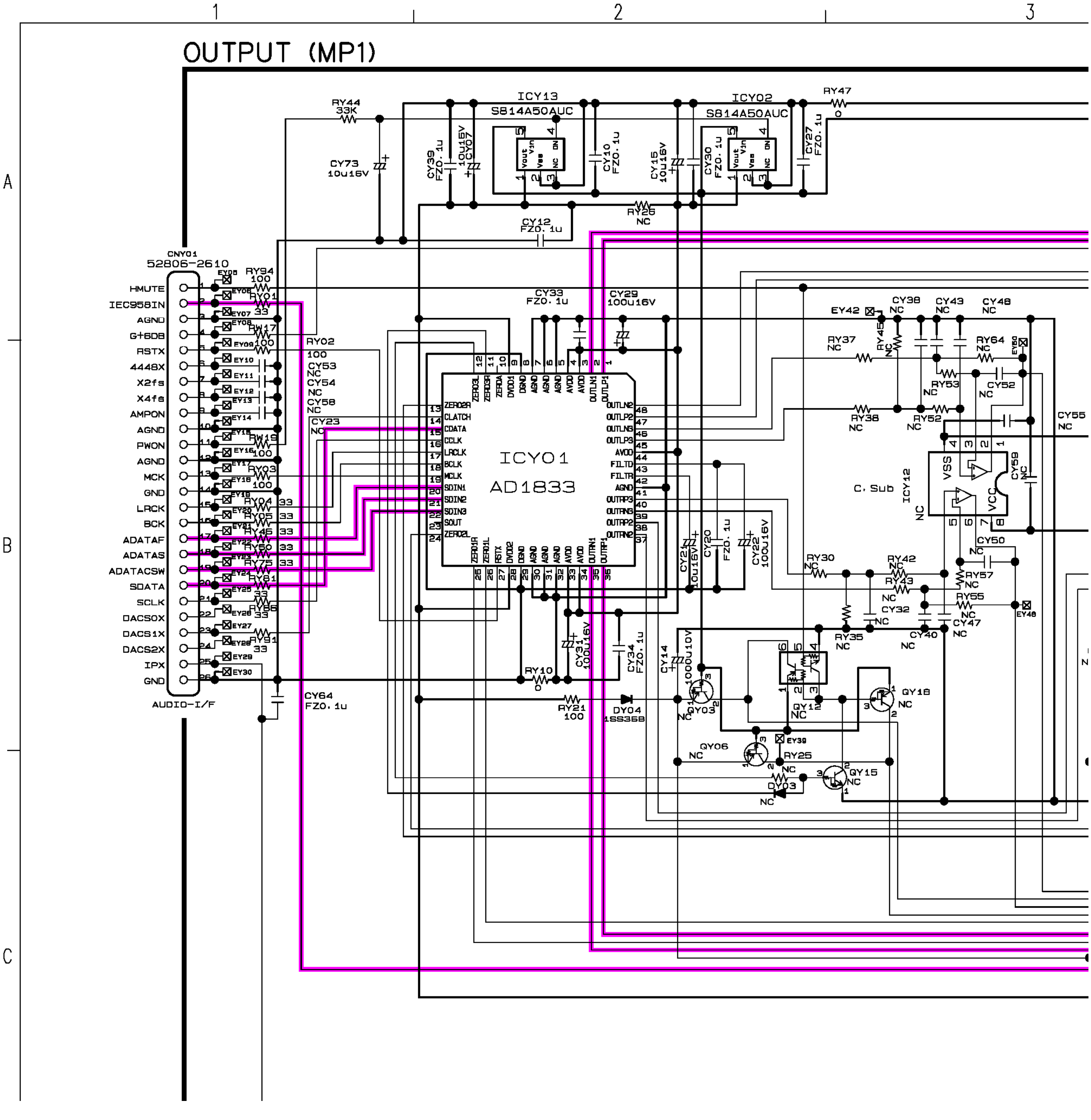
	SD-3750/SD-K700	SD-3500
RX30	NC	3.3k
RX16	NC	75F
RX18	NC	75F
RX22	NC	75F
QX19	NC	DTA114EKA
QX20	NC	DTC114EKA
QX21	NC	DTA114EKA
RX14	NC	4.7k
RX15	NC	10k
RX17	NC	2.2k

Fig. 3-5-7

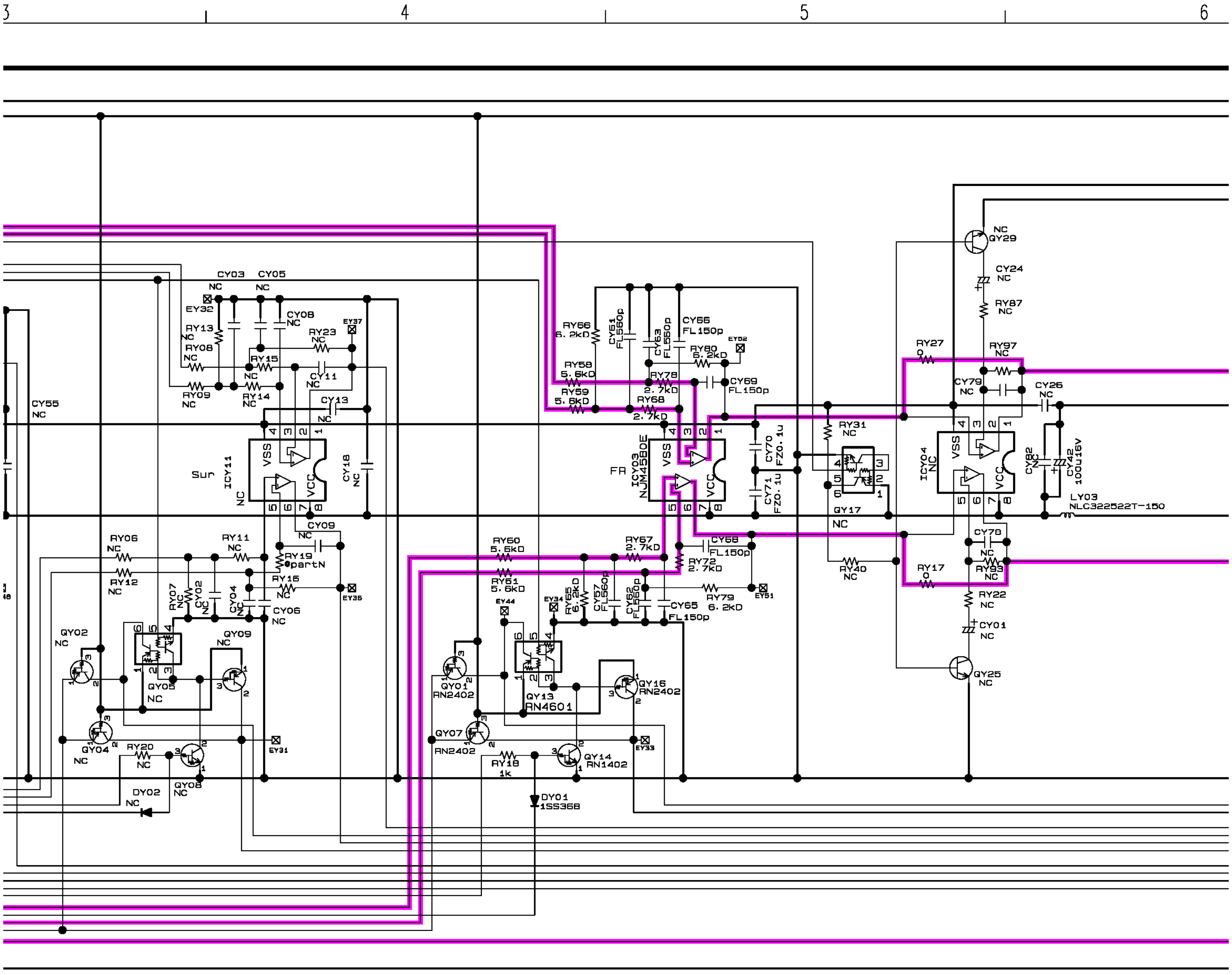
5-4. Output Circuit Diagram

Note that the output circuit has two types.

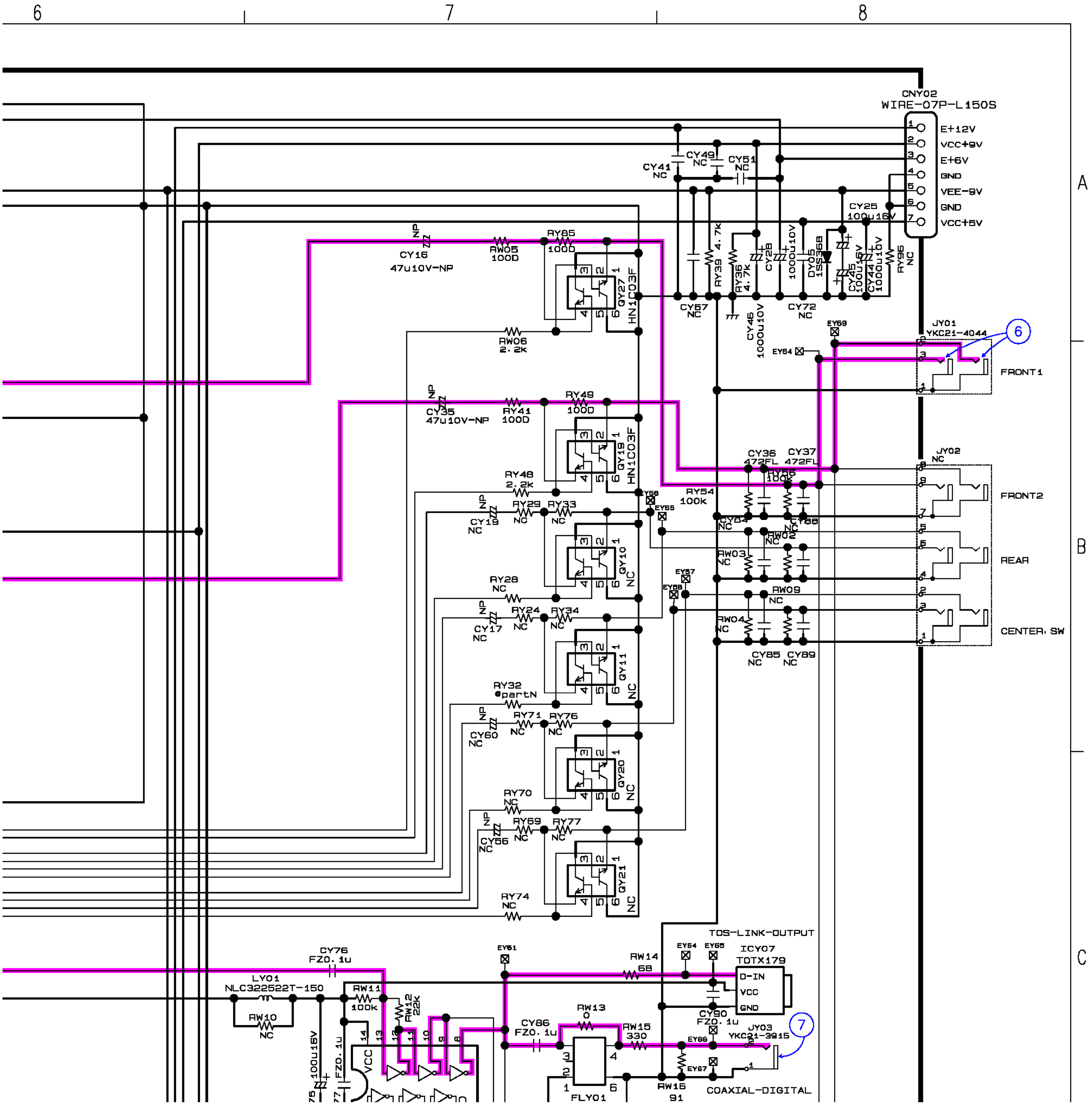
5-4-1. Output Circuit Diagram (No. 9823128700)

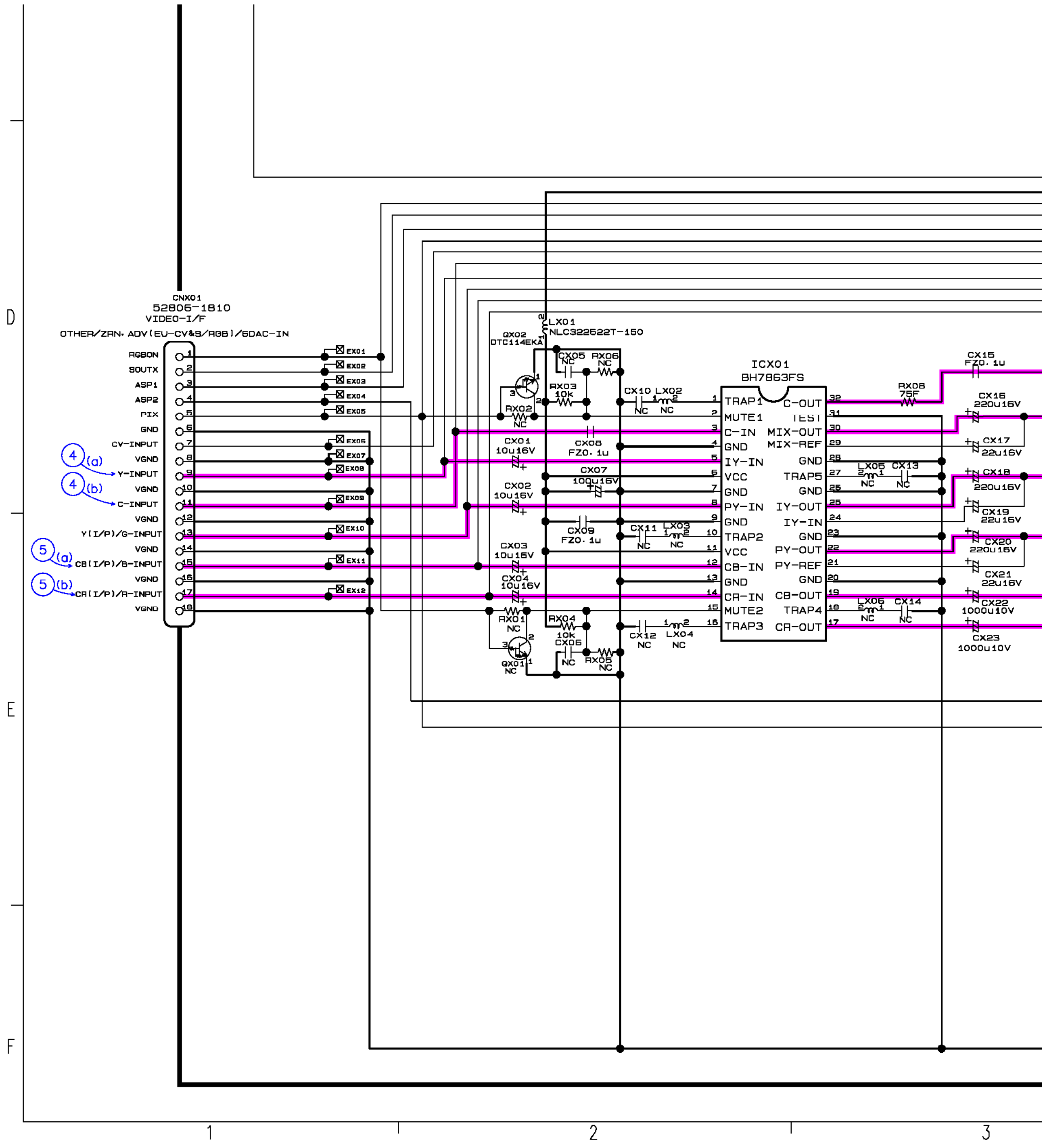


1
2
3
A
B
C
OUTPUT (MP1)
RY44 33K
CY73 10u16V
ICY13 S814A50AUC
CY39 FZ0.1u
CY07 10u16V
CY10 FZ0.1u
CY15 10u16V
CY30 FZ0.1u
ICY02 S814A50AUC
CY27 FZ0.1u
RY47 0
Vout
Vin
Vss
NC
ON
RY26 NC
CY12 FZ0.1u
CNY01 52806-2610
HMUTE
IEC958IN
AGND
G+6DB
RSTX
448X
X2fs
X4fs
AMPON
AGND
PWON
AGND
MCK
GND
LRCK
BCK
ADATAF
ADATAS
ADATACSW
SDATA
SCLK
DACS0X
DACS1X
DACS2X
IPX
GND
AUDIO-I/F
RY94 100
RY01 33
RW17 100
RY02 100
CY53 NC
CY54 NC
CY58 NC
CY23 NC
RW19 100
RY03 100
RY04 33
RY05 33
RY46 33
RY50 33
RY75 33
RY61 33
RY56 33
RY91 33
CY64 FZ0.1u
CY33 FZ0.1u
CY29 100u16V
ICY01
AD1833
ZERO2R
CLATCH
CDATA
CCLK
LRCLK
BCLK
MCLK
SDIN1
SDIN2
SDIN3
SOUT
ZERO2L
OUTLN2
OUTLP2
OUTLN3
OUTLP3
AVDD
FILTD
FILTR
AGND
OUTRP3
OUTRN3
OUTRP2
OUTRN2
CY21 10u16V
CY20 FZ0.1u
CY22 100u16V
RY10 0
CY31 100u16V
CY34 FZ0.1u
RY21 100
DY04 1SS355
CY14 1000u10V
QY03 NC
QY06 NC
DY03 NC
RY25 NC
EY39
QY12 NC
QY15 NC
QY18 NC
EY42
CY38 NC
CY43 NC
CY48 NC
RY37 NC
RY45 NC
RY64 NC
RY53 NC
CY52 NC
RY38 NC
RY52 NC
CY55 NC
C.Sub
ICY12 NC
VSS
VCC
CY59 NC
CY50 NC
RY30 NC
RY42 NC
RY43 NC
RY57 NC
RY55 NC
CY32 NC
RY35 NC
CY40 NC
CY47 NC
EY48

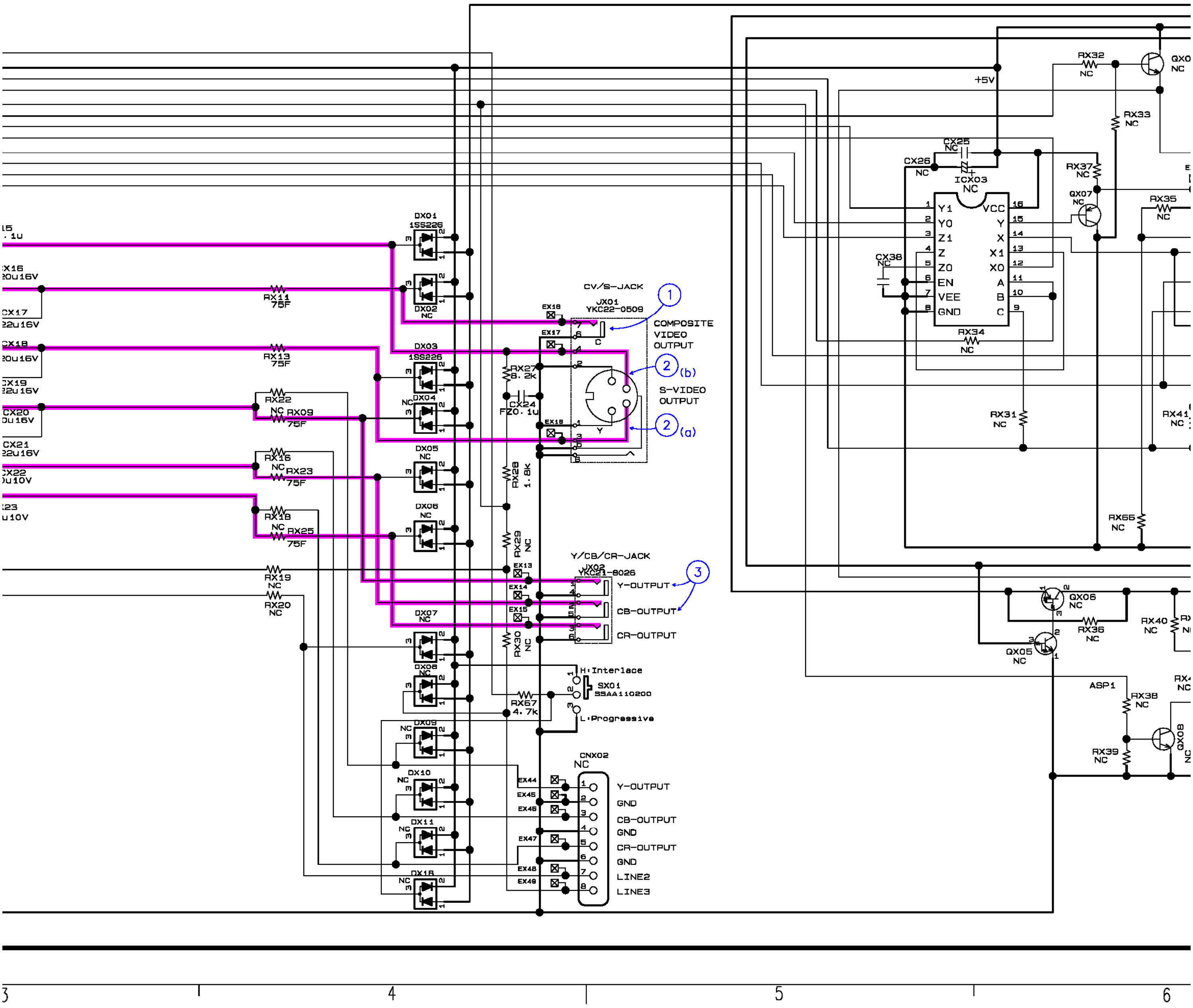

3
4
5
6
CY03
NC
CY05
NC
EY32
CY08
NC
EY37
RY13
NC
RY08
NC
RY23
NC
RY15
NC
CY11
NC
RY09
NC
RY14
NC
CY13
NC
CY55
NC
Sur
ICY11
NC
VSS
VCC
CY18
NC
CY09
NC
RY06
NC
RY11
NC
RY19
●partN
RY12
NC
RY16
NC
EY36
RY07
NC
CY02
NC
CY04
NC
CY06
NC
QY02
NC
QY09
NC
QY05
NC
QY04
NC
RY20
NC
EY31
QY08
NC
DY02
NC
RY66
6.2kD
CY51
FL560p
CY63
FL560p
CY66
FL150p
RY80
6.2kD
EY52
RY58
5.6kD
RY78
2.7kD
CY69
FL150p
RY59
5.6kD
RY68
2.7kD
FR
ICY03
NJM4580E
CY70
FZ0.1u
CY71
FZ0.1u
RY31
NC
QY17
NC
RY67
2.7kD
CY68
FL150p
RY72
2.7kD
RY40
NC
RY60
5.6kD
RY61
5.6kD
EY44
EY34
RY65
6.2kD
CY57
FL560p
CY62
FL560p
CY65
FL150p
RY79
6.2kD
EY51
QY01
RN2402
QY13
RN4601
QY16
RN2402
QY07
RN2402
RY18
1k
QY14
RN1402
EY33
DY01
1SS368
NC
QY29
CY24
NC
RY87
NC
RY27
0
RY97
NC
CY79
NC
CY26
NC
ICY04
NC
CY82
NC
CY42
100u16V
LY03
NLC322522T-150
CY78
NC
RY17
0
RY93
NC
RY22
NC
CY01
NC
QY25
NC

	SD-3750/SD-K700/SD-3500
JX01	YKC22-0535
JX02	YKC21-8038


6
7
8
A
B
C
CNY02
WIRE-07P-L150S
E+12V
VCC+9V
E+6V
GND
VEE-9V
GND
VCC+5V
CY41
NC
CY49
NC
CY51
NC
CY25
100u16V
RY85
100Ω
RW05
100Ω
CY16
47u10V-NP
NP
QY27
HN1C03F
RW06
2.2K
RY39
4.7K
RY36
4.7K
CY28
1000u10V
DY05
1SS388
CY43
100u16V
CY44
1000u10V
RY96
NC
CY67
NC
CY45
1000u10V
CY72
NC
EY69
EY54
JY01
YKC21-4044
⑥
FRONT1
RY49
100Ω
RY41
100Ω
CY35
47u10V-NP
QY19
HN1C03F
RY48
2.2K
CY36
472FL
CY37
472FL
RY56
100K
RY54
100K
EY56
EY55
JY02
NC
FRONT2
RY29
NC
RY33
NC
CY19
NC
CY64
NC
RW02
NC
CY88
RW03
NC
QY10
NC
REAR
RY28
NC
EY57
EY58
RW09
NC
RY24
NC
RY34
NC
CY17
NC
RW04
NC
CENTER, SW
CY85
NC
CY89
NC
QY11
NC
RY32
*partN
RY71
NC
RY76
NC
CY60
NC
QY20
NC
RY70
NC
RY69
NC
RY77
NC
CY66
NC
QY21
NC
RY74
NC
TOS-LINK-OUTPUT
ICY07
TOTX179
D-IN
VCC
GND
EY64
EY65
EY61
CY76
FZ0.1u
LY01
NLC322522T-150
RW10
NC
RW11
100K
RW12
22K
RW14
68
RW13
0
CY86
FZ0.1u
RW15
330
CY90
FZ0.1u
EY66
EY67
JY03
YKC21-3915
⑦
RW16
91
COAXIAL-DIGITAL
FLY01
VCC
100u16V
FZ0.1u
14
13
12
11
10
9
8
1
2
3
4
5
6


D
E
F
1
2
3
CNX01
52806-1810
VIDEO-I/F
OTHER/ZRN. ADV(EU-CV&S/RGB)/6DAC-IN
RGBON
SOUTX
ASP1
ASP2
PIX
GND
CV-INPUT
VGND
Y-INPUT
VGND
C-INPUT
VGND
Y(I/P)/G-INPUT
VGND
CB(I/P)/B-INPUT
VGND
CR(I/P)/R-INPUT
VGND
④(a)
④(b)
⑤(a)
⑤(b)
EX01
EX02
EX03
EX04
EX05
EX06
EX07
EX08
EX09
EX10
EX11
EX12
LX01
NLC322522T-150
QX02
DTC114EKA
CX05
NC
RX06
NC
RX03
10k
RX02
NC
CX10
NC
LX02
NC
CX08
FZ0.1u
CX01
10u16V
CX07
100u16V
CX02
10u16V
CX09
FZ0.1u
CX11
NC
LX03
NC
CX03
10u16V
CX04
10u16V
RX01
NC
RX04
10k
CX06
NC
RX05
NC
QX01
NC
CX12
NC
LX04
NC
ICX01
BH7863FS
TRAP1
MUTE1
C-IN
GND
IY-IN
VCC
GND
PY-IN
GND
TRAP2
VCC
CB-IN
GND
CR-IN
MUTE2
TRAP3
C-OUT
TEST
MIX-OUT
MIX-REF
GND
TRAP5
GND
IY-OUT
IY-IN
GND
PY-OUT
PY-REF
GND
CB-OUT
TRAP4
CR-OUT
RX08
75F
CX15
FZ0.1u
CX16
220u16V
CX17
22u16V
LX05
NC
CX13
NC
CX18
220u16V
CX19
22u16V
CX20
220u16V
CX21
22u16V
LX06
NC
CX14
NC
CX22
1000u10V
CX23
1000u10V

	SD-3750/SD-K700/SD-3500
JX01	YKC22-0535
JX02	YKC21-8038
JY01	YKC21-4042
JY03	YKC21-3895


DX01
1SS226
DX02
NC
DX03
1SS226
DX04
NC
DX05
NC
DX06
NC
DX07
NC
DX08
NC
DX09
NC
DX10
NC
DX11
NC
DX18
NC
CX16
CX17
22u16V
CX18
CX19
22u16V
CX20
CX21
22u16V
CX22
CX23
RX11
75F
RX13
75F
RX22
NC
RX09
75F
RX16
NC
RX23
75F
RX18
NC
RX25
75F
RX19
NC
RX20
NC
RX27
8.2k
CX24
F20.1u
RX28
1.8k
RX29
NC
RX30
NC
RX67
4.7k
EX16
EX17
EX18
EX13
EX14
EX15
EX44
EX45
EX46
EX47
EX48
EX49
CV/S-JACK
JX01
YKC22-0509
COMPOSITE
VIDEO
OUTPUT
C
Y
S-VIDEO
OUTPUT
①
②(b)
②(a)
③
Y/CB/CR-JACK
JX02
YKC21-8026
Y-OUTPUT
CB-OUTPUT
CR-OUTPUT
H:Interlace
SX01
SSAA110200
L:Progressive
CNX02
NC
Y-OUTPUT
GND
CB-OUTPUT
GND
CR-OUTPUT
GND
LINE2
LINE3
+5V
CX25
NC
CX26
NC
ICX03
NC
Y1
Y0
Z1
Z
Z0
EN
VEE
GND
VCC
Y
X
X1
X0
A
B
C
CX38
NC
RX34
NC
RX31
NC
RX32
NC
RX33
NC
RX37
NC
QX07
NC
RX35
NC
RX41
NC
RX65
NC
QX06
NC
QX05
NC
RX36
NC
RX40
NC
ASP1
RX38
NC
RX39
NC
QX08
NC
3
4
5
6

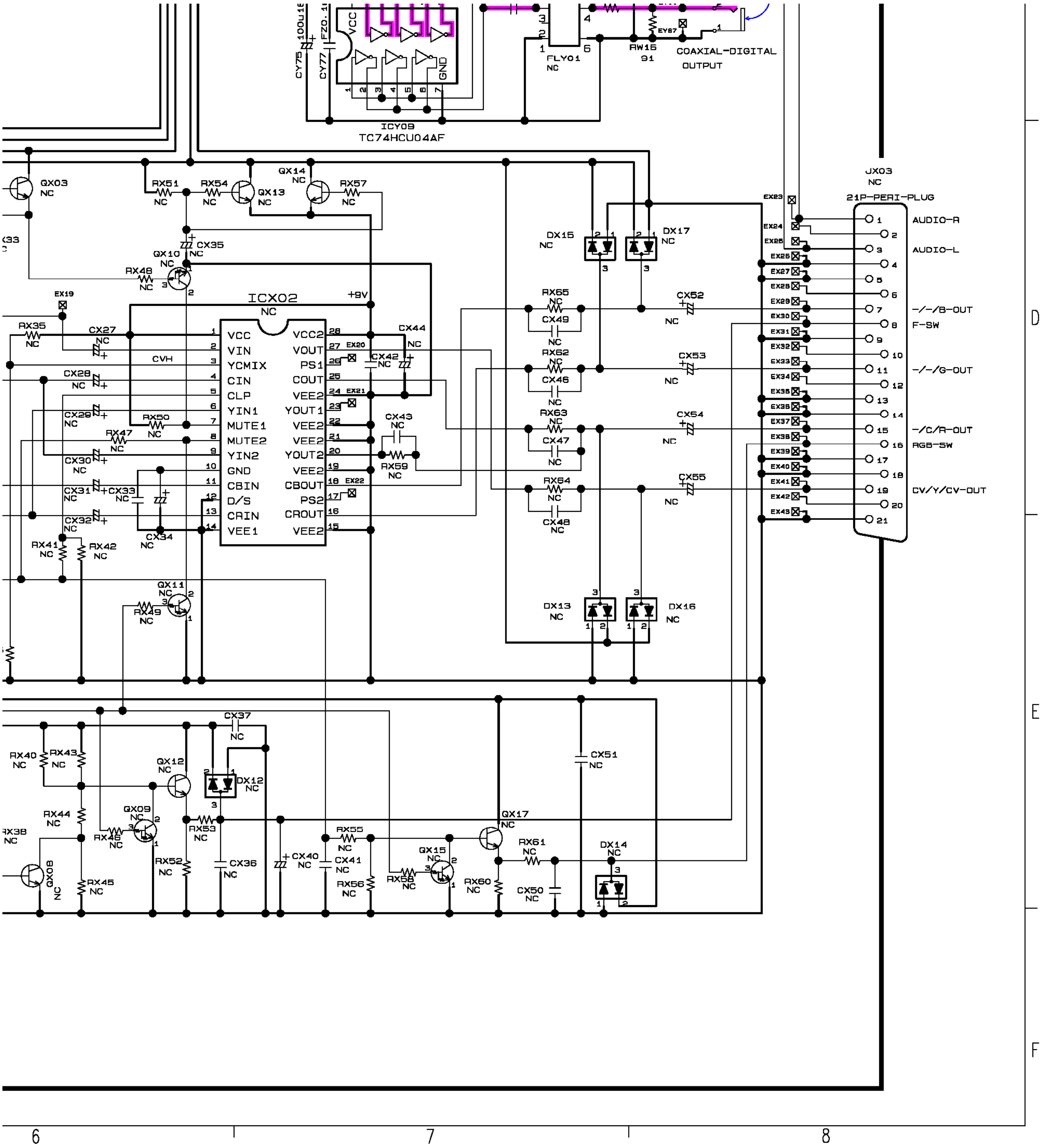
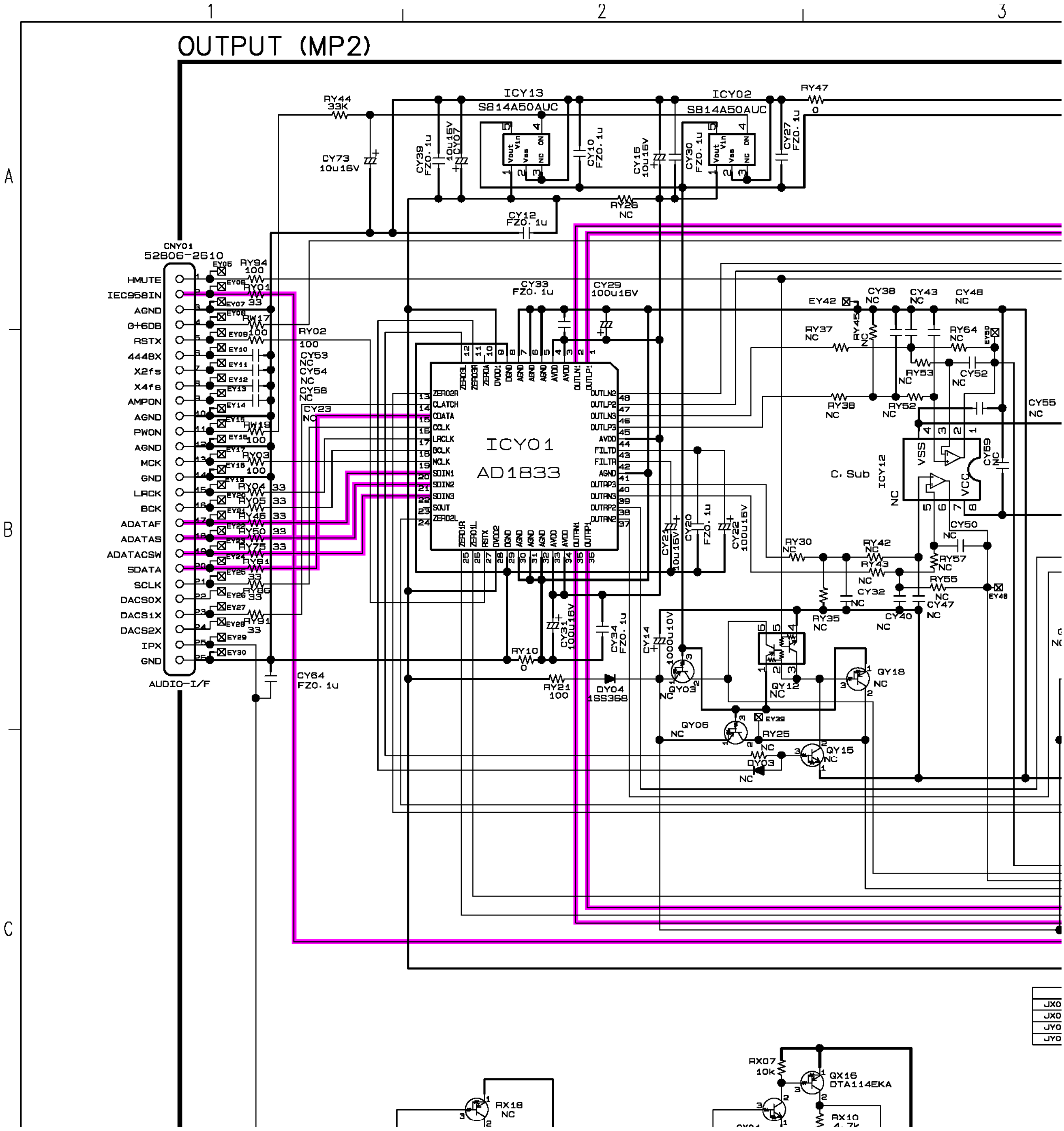
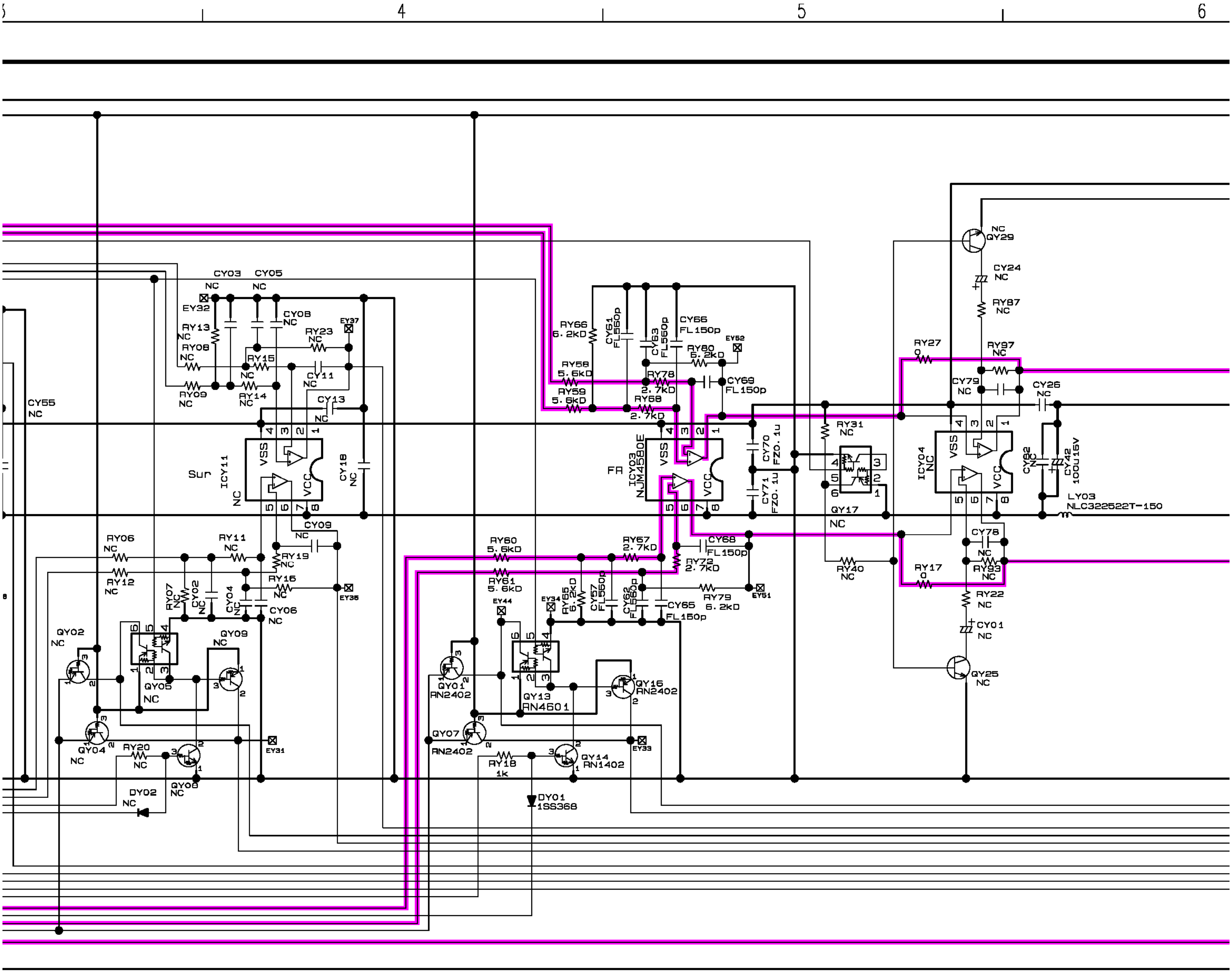

CY75
100u16
CY77
FZ0.1
VCC
GND
ICY09
TC74HCU04AF
FLY01
NC
RW16
91
EY67
COAXIAL-DIGITAL
OUTPUT
QX03
NC
RX51
NC
RX54
NC
QX13
NC
QX14
NC
RX57
NC
CX35
NC
QX10
NC
RX48
NC
EX19
ICX02
NC
+9V
VCC
VIN
YCMIX
CIN
CLP
YIN1
MUTE1
MUTE2
YIN2
GND
CBIN
D/S
CRIN
VEE1
VCC2
VOUT
PS1
COUT
VEE2
YOUT1
VEE2
VEE2
YOUT2
VEE2
CBOUT
PS2
CROUT
VEE2
RX35
NC
CX27
NC
CVH
CX28
NC
CX29
NC
RX50
NC
RX47
NC
CX30
NC
CX31
NC
CX33
NC
CX32
NC
CX34
NC
RX41
NC
RX42
NC
EX20
CX42
NC
CX44
NC
EX21
CX43
NC
RX59
NC
EX22
QX11
NC
RX49
NC
DX15
NC
DX17
NC
RX65
NC
CX49
NC
CX52
NC
RX62
NC
CX46
NC
CX53
NC
RX63
NC
CX47
NC
CX54
NC
RX64
NC
CX48
NC
CX55
NC
DX13
NC
DX16
NC
JX03
NC
21P-PERI-PLUG
EX23
EX24
EX25
EX26
EX27
EX28
EX29
EX30
EX31
EX32
EX33
EX34
EX35
EX36
EX37
EX38
EX39
EX40
EX41
EX42
EX43
AUDIO-R
AUDIO-L
-/-/B-OUT
F-SW
-/-/G-OUT
-/C/R-OUT
RGB-SW
CV/Y/CV-OUT
CX37
NC
RX40
NC
RX43
NC
QX12
NC
DX12
NC
RX44
NC
QX09
NC
RX46
NC
RX53
NC
RX38
NC
QX08
NC
RX52
NC
CX36
NC
CX40
NC
CX41
NC
RX55
NC
RX56
NC
RX58
NC
QX15
NC
QX17
NC
RX61
NC
RX60
NC
CX50
NC
CX51
NC
DX14
NC
RX45
NC
D
E
F
6
7
8

Fig. 3-5-6

5-4-2. Output Circuit Diagram (No. 9823128701)

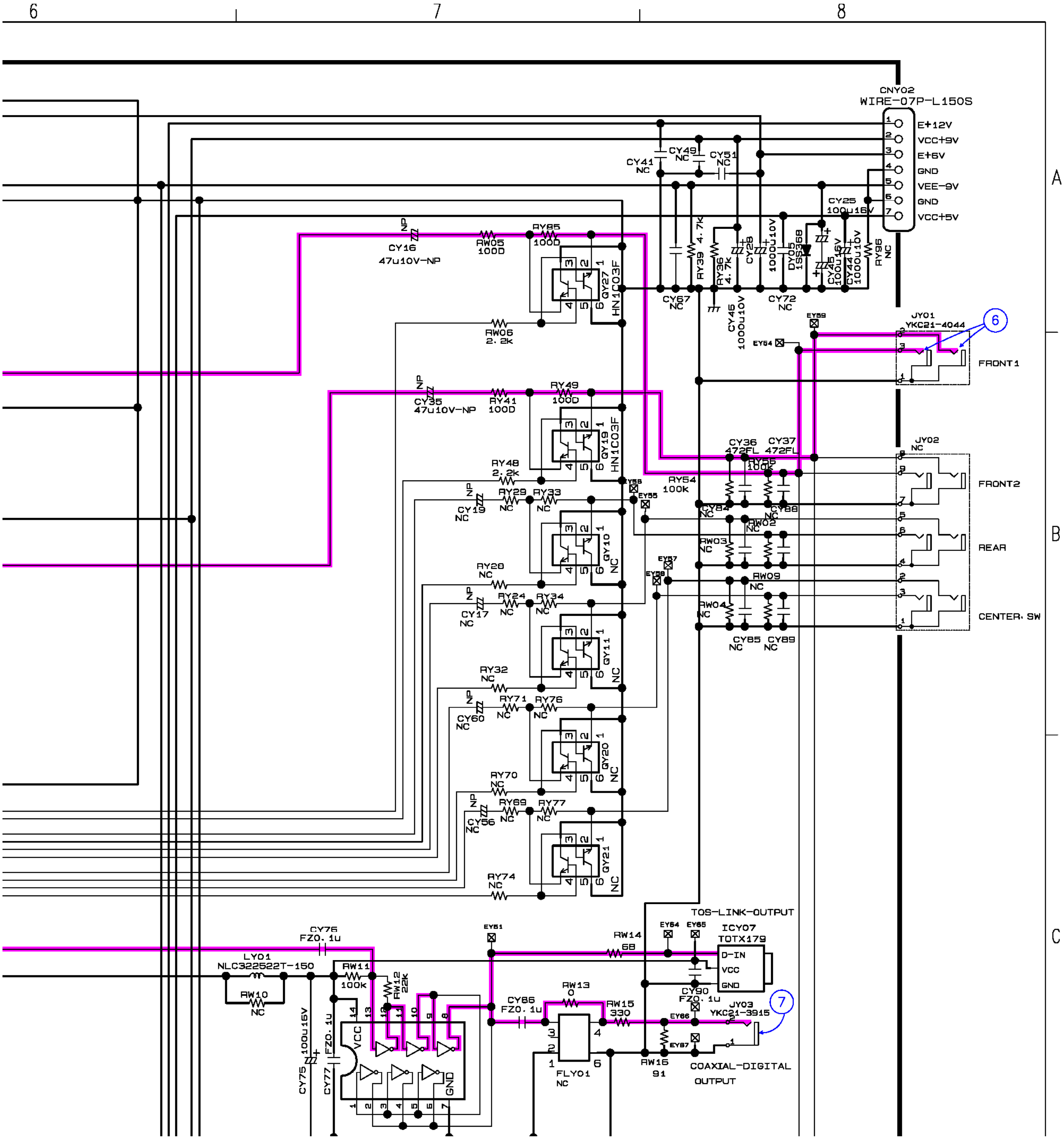

1
2
3
A
B
C
OUTPUT (MP2)
CNY01
52806-2610
HMUTE
IEC958IN
AGND
G+6DB
RSTX
4448X
X2fs
X4fs
AMPON
AGND
PWON
AGND
MCK
GND
LRCK
BCK
ADATAF
ADATAS
ADATACSW
SDATA
SCLK
DACS0X
DACS1X
DACS2X
IPX
GND
AUDIO-I/F
RY94 100
RY01
RY02 100
RY03 100
RY04 33
RY05 33
RY46 33
RY50 33
RY75 33
RY81 33
RY86 33
RY91 33
RY17 100
RY19 100
CY53 NC
CY54 NC
CY58 NC
CY23 NC
CY64 FZ0.1u
RY44 33K
CY73 10u16V
CY39 FZ0.1u
CY07 10u16V
ICY13
S814A50AUC
CY10 FZ0.1u
CY15 10u16V
CY30 FZ0.1u
ICY02
S814A50AUC
CY27 FZ0.1u
RY47 0
RY26 NC
CY12 FZ0.1u
CY33 FZ0.1u
CY29 100u16V
ICY01
AD1833
ZERO2R
CLATCH
CDATA
CCLK
LRCLK
BCLK
MCLK
SDIN1
SDIN2
SDIN3
SOUT
ZERO2L
OUTLN2
OUTLP2
OUTLN3
OUTLP3
AVDD
FILTD
FILTR
AGND
OUTRP3
OUTRN3
OUTRP2
OUTRN2
CY24 10u16V
CY20 FZ0.1u
CY22 100u16V
CY31 100u16V
CY34 FZ0.1u
RY10 0
RY21 100
DY04 1SS368
CY14 1000u10V
QY03 NC
QY06 NC
QY12 NC
QY15 NC
QY18 NC
RY25 NC
DY03 NC
EY39
EY42
CY38 NC
CY43 NC
CY48 NC
RY37 NC
RY45 NC
RY64 NC
EY50
RY53 NC
CY52 NC
RY38 NC
RY52 NC
CY55 NC
ICY12 NC
C. Sub
VSS
VCC
CY59 NC
CY50 NC
RY30 NC
RY42 NC
RY43 NC
RY57 NC
RY55 NC
EY48
RY35 NC
CY32 NC
CY40 NC
CY47 NC
RX07 10k
QX16 DTA114EKA
RX18 NC
RX10 4.7k

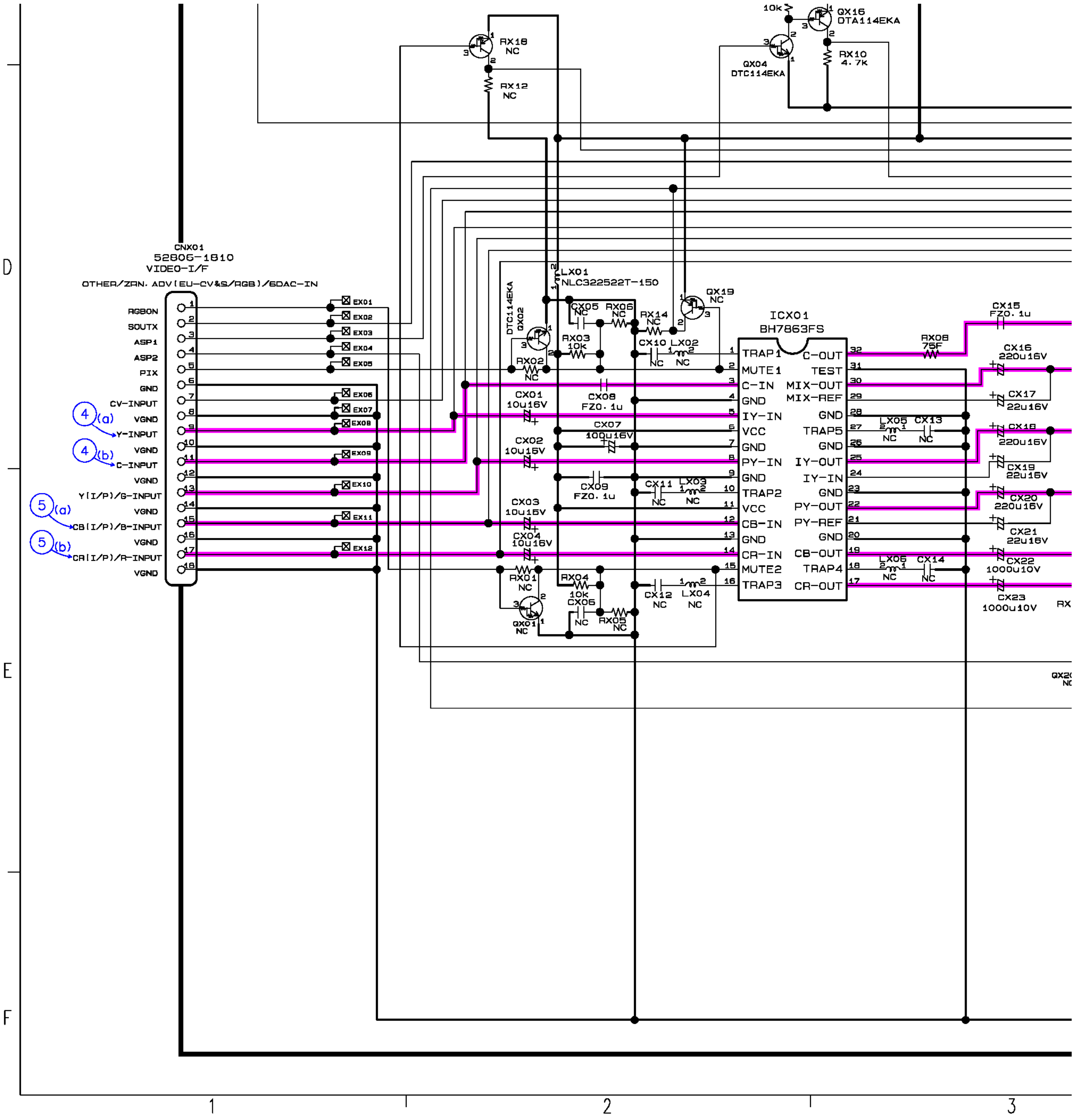

4
5
6
CY55
NC
CY03
NC
CY05
NC
EY32
CY08
NC
EY37
RY13
NC
RY08
NC
RY23
NC
RY15
NC
CY11
NC
RY09
NC
RY14
NC
CY13
NC
Sur
ICY11
NC
VSS
VCC
CY18
NC
CY09
NC
RY06
NC
RY11
NC
RY19
NC
RY12
NC
RY16
NC
EY35
RY07
NC
CY02
NC
CY04
NC
CY06
NC
QY02
NC
QY09
NC
QY05
NC
QY04
NC
RY20
NC
EY31
QY08
NC
DY02
NC
RY66
6.2kD
CY61
FL560p
CY63
FL560p
CY66
FL150p
EY52
RY80
6.2kD
RY58
5.6kD
RY78
2.7kD
CY69
FL150p
RY59
5.6kD
RY68
2.7kD
FR
ICY03
NJM4580E
CY70
FZ0.1u
CY71
FZ0.1u
RY60
5.6kD
RY67
2.7kD
CY68
FL150p
RY72
2.7kD
RY61
5.6kD
EY44
EY34
RY65
6.2kD
CY57
FL560p
CY62
FL560p
CY65
FL150p
RY79
6.2kD
EY51
QY01
RN2402
QY13
RN4601
QY16
RN2402
QY07
RN2402
QY14
RN1402
EY33
RY18
1k
DY01
1SS368
RY31
NC
QY17
NC
RY40
NC
NC
QY29
CY24
NC
RY87
NC
RY27
0
RY97
NC
CY79
NC
CY26
NC
ICY04
NC
CY82
NC
CY42
100u16V
LY03
NLC322522T-150
CY78
NC
RY17
0
RY93
NC
RY22
NC
CY01
NC
QY25
NC

	SD-3750/SD-K700/SD-3500
JX01	YKC22-0535
JX02	YKC21-B038
JY01	YKC21-4042
JY03	YKC21-3B95

	SD-3750/SD-K700	SD-3500
CNX02	NC	52806-0810
DX06	NC	1SS226
DX07	NC	1SS226
DX08	NC	1SS226
DX09	NC	1SS226
DX10	NC	1SS226
DX11	NC	1SS226
RX19	NC	10k
RX20	NC	10k
RX29	NC	15k

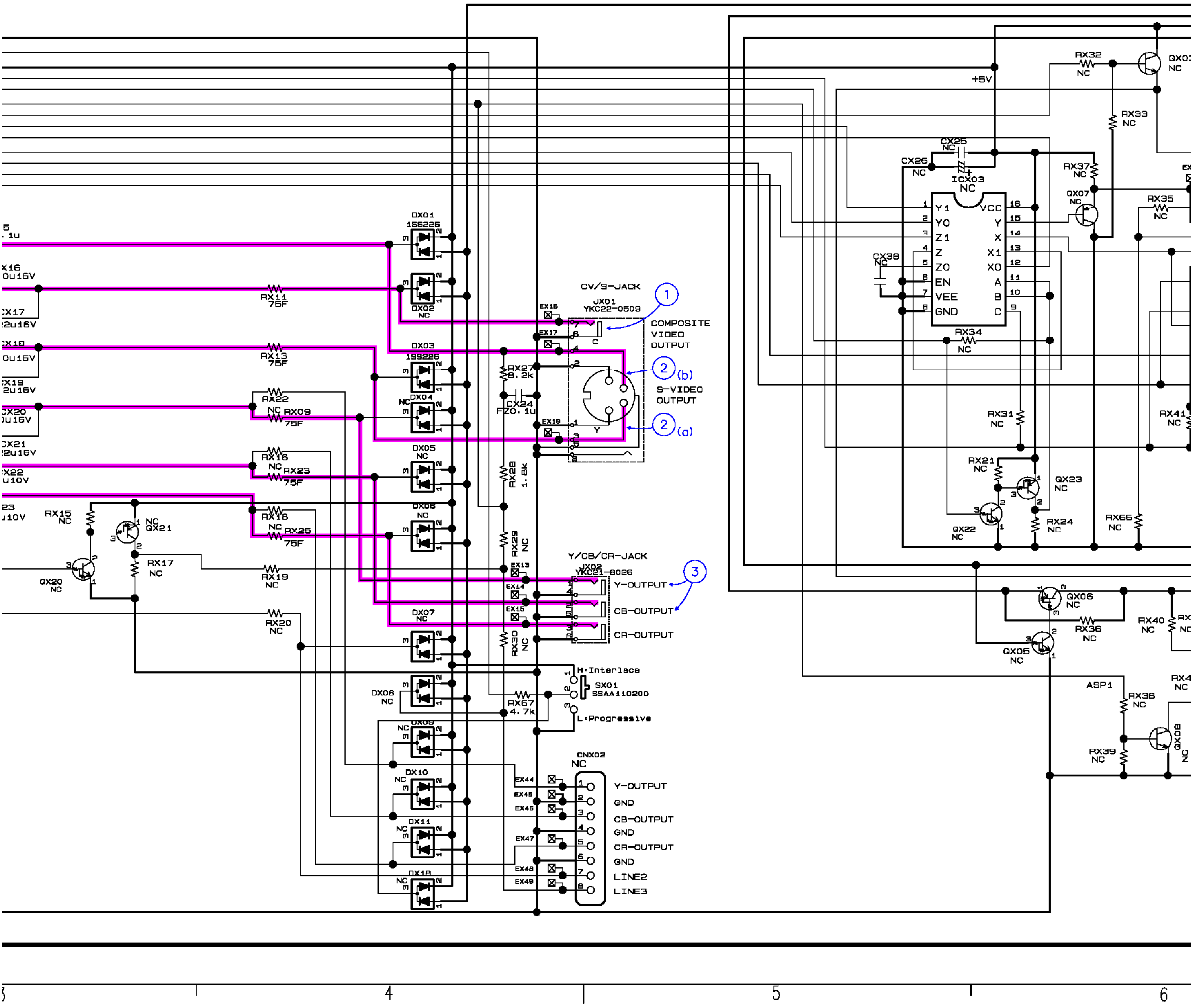
	SD-3750/SD-K700	SD-3500
RX30	NC	3.3k
RX16	NC	75F
RX18	NC	75F
RX22	NC	75F
QX19	NC	DTA114EKA
QX20	NC	DTC114EKA
QX21	NC	DTA114EKA
RX14	NC	4.7k
RX15	NC	10k
RX17	NC	2.2k


6
7
8
A
B
C
CNY02
WIRE-07P-L150S
E+12V
VCC+9V
E+6V
GND
VEE-9V
GND
VCC+5V
CY41 NC
CY49 NC
CY51 NC
CY25 100u16V
RY39 4.7k
RY36 4.7k
CY28
1000u10V
DY05 1SS368
CY45 100u16V
CY44 1000u10V
RY96 NC
CY67 NC
CY46 1000u10V
CY72 NC
CY16 47u10V-NP
RW05 100D
RY85 100D
QY27 HN1C03F
RW06 2.2k
CY35 47u10V-NP
RY41 100D
RY49 100D
QY19 HN1C03F
RY48 2.2k
CY19 NC
RY29 NC
RY33 NC
QY10 NC
RY28 NC
CY17 NC
RY24 NC
RY34 NC
QY11 NC
RY32 NC
CY60 NC
RY71 NC
RY76 NC
QY20 NC
RY70 NC
CY56 NC
RY69 NC
RY77 NC
QY21 NC
RY74 NC
NP
EY59
EY54
EY58
EY55
EY57
EY56
JY01
YKC21-4044
FRONT1
⑥
JY02
NC
FRONT2
REAR
CENTER, SW
CY36 472FL
CY37 472FL
RY55 100k
RY54 100k
CY84 NC
CY88 NC
RW02 NC
RW03 NC
RW09 NC
RW04 NC
CY85 NC
CY89 NC
TOS-LINK-OUTPUT
ICY07
TOTX179
D-IN
VCC
GND
EY61
EY64
EY65
RW14 68
CY76 FZ0.1u
LY01
NLC322522T-150
RW10 NC
RW11 100k
RW12 22k
CY75 100u16V
CY77 FZ0.1u
VCC
GND
CY66 FZ0.1u
RW13 0
RW15 330
FLY01 NC
RW16 91
CY90 FZ0.1u
EY66
EY67
JY03
YKC21-3915
⑦
COAXIAL-DIGITAL OUTPUT


D
E
F
1
2
3
CNX01
52806-1810
VIDEO-I/F
OTHER/ZRN. ADV(EU-CV&S/RGB)/6DAC-IN
RGBON
SOUTX
ASP1
ASP2
PIX
GND
CV-INPUT
VGND
Y-INPUT
VGND
C-INPUT
VGND
Y(I/P)/G-INPUT
VGND
CB(I/P)/B-INPUT
VGND
CR(I/P)/R-INPUT
VGND
4 (a)
4 (b)
5 (a)
5 (b)
EX01
EX02
EX03
EX04
EX05
EX06
EX07
EX08
EX09
EX10
EX11
EX12
RX18
NC
RX12
NC
10k
QX16
DTA114EKA
QX04
DTC114EKA
RX10
4.7K
LX01
NLC322522T-150
DTC114EKA
QX02
CX05
NC
RX06
NC
RX14
NC
QX19
NC
RX03
10k
RX02
NC
CX10
NC
LX02
NC
CX01
10u16V
CX08
FZ0.1u
CX07
100u16V
CX02
10u16V
CX09
FZ0.1u
CX11
NC
LX03
NC
CX03
10u16V
CX04
10u16V
RX01
NC
RX04
10k
CX06
NC
RX05
NC
QX01
NC
CX12
NC
LX04
NC
ICX01
BH7863FS
TRAP1
MUTE1
C-IN
GND
IY-IN
VCC
GND
PY-IN
GND
TRAP2
VCC
CB-IN
GND
CR-IN
MUTE2
TRAP3
C-OUT
TEST
MIX-OUT
MIX-REF
GND
TRAP5
GND
IY-OUT
IY-IN
GND
PY-OUT
PY-REF
GND
CB-OUT
TRAP4
CR-OUT
RX08
75F
CX15
FZ0.1u
CX16
220u16V
CX17
22u16V
LX05
NC
CX13
NC
CX18
220u16V
CX19
22u16V
CX20
220u16V
CX21
22u16V
LX06
NC
CX14
NC
CX22
1000u10V
CX23
1000u10V
RX
QX2
N

DX11	NC	1SS226
RX19	NC	10k
RX20	NC	10k
RX29	NC	15k

QX21	NC	DTA114EKA
RX14	NC	4.7k
RX15	NC	10k
RX17	NC	2.2k



CV/S-JACK
JX01
YKC22-0509
① COMPOSITE VIDEO OUTPUT
② (b) S-VIDEO OUTPUT
② (a)
Y/CB/CR-JACK
JX02
YKC21-8026
③
Y-OUTPUT
CB-OUTPUT
CR-OUTPUT
H:Interlace
SX01
SSAA110200
L:Progressive
CNX02
NC
Y-OUTPUT
GND
CB-OUTPUT
GND
CR-OUTPUT
GND
LINE2
LINE3
DX01 1SS226
DX02 NC
DX03 1SS226
DX04 NC
DX05 NC
DX06 NC
DX07 NC
DX08 NC
DX09 NC
DX10 NC
DX11 NC
DX12 NC
RX11 75F
RX13 75F
RX22 NC
RX09 75F
RX16 NC
RX23 75F
RX18 NC
RX25 75F
RX15 NC
RX17 NC
RX19 NC
RX20 NC
QX21 NC
QX20 NC
RX27 8.2k
CX24 F20.1u
RX28 1.8k
RX29 NC
RX30 NC
RX67 4.7k
EX13
EX14
EX15
EX16
EX17
EX18
EX44
EX45
EX46
EX47
EX48
EX49
ICX03 NC
CX25 NC
CX26 NC
CX38 NC
Y1 YO Z1 Z ZO EN VEE GND
VCC Y X X1 XO A B C
+5V
RX32 NC
QX01 NC
RX33 NC
RX37 NC
QX07 NC
RX35 NC
RX34 NC
RX31 NC
RX41 NC
RX21 NC
QX23 NC
QX22 NC
RX24 NC
RX66 NC
QX06 NC
RX36 NC
RX40 NC
QX05 NC
ASP1
RX38 NC
RX39 NC
QX08 NC
3
4
5
6

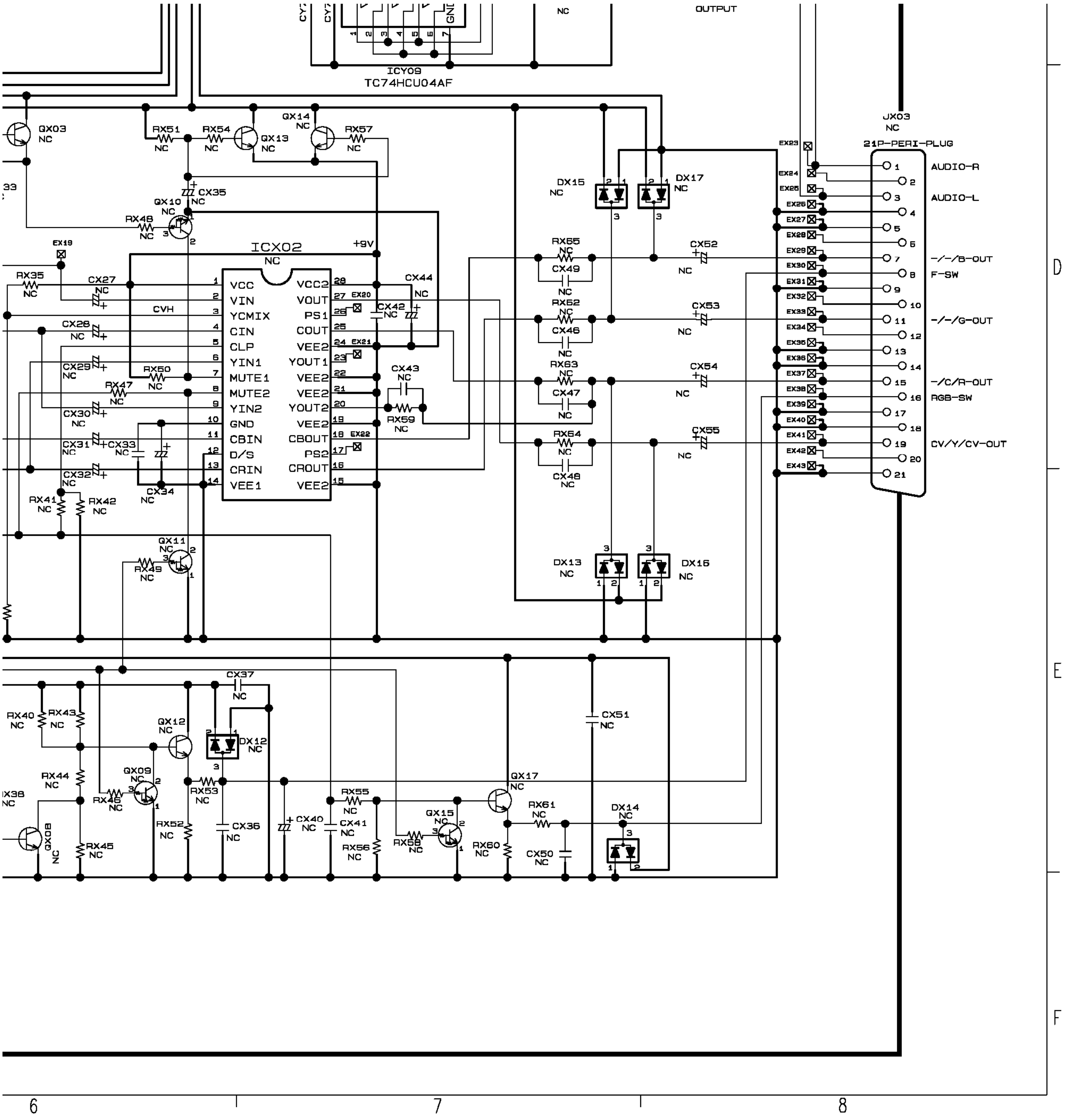
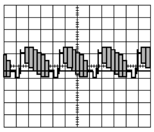

ICY09
TC74HCU04AF
OUTPUT
NC
JX03
NC
21P-PERI-PLUG
1 AUDIO-R
2
3 AUDIO-L
4
5
6
7 -/-/B-OUT
8 F-SW
9
10
11 -/-/G-OUT
12
13
14
15 -/C/R-OUT
16 RGB-SW
17
18
19 CV/Y/CV-OUT
20
21
EX23
EX24
EX25
EX26
EX27
EX28
EX29
EX30
EX31
EX32
EX33
EX34
EX35
EX36
EX37
EX38
EX39
EX40
EX41
EX42
EX43
QX03 NC
RX51 NC
RX54 NC
QX13 NC
QX14 NC
RX57 NC
CX35 NC
QX10 NC
RX48 NC
EX19
DX15 NC
DX17 NC
RX65 NC
CX49 NC
CX52 NC
RX62 NC
CX46 NC
CX53 NC
RX63 NC
CX47 NC
CX54 NC
RX64 NC
CX48 NC
CX55 NC
DX13 NC
DX16 NC
ICX02
NC
+9V
1 VCC
2 VIN
3 YCMIX
4 CIN
5 CLP
6 YIN1
7 MUTE1
8 MUTE2
9 YIN2
10 GND
11 CBIN
12 D/S
13 CRIN
14 VEE1
28 VCC2
27 VOUT
26 PS1
25 COUT
24 VEE2
23
22 VEE2
21 VEE2
20 YOUT2
19 VEE2
18 CBOUT
17 PS2
16 CROUT
15 VEE2
EX20
EX21
EX22
CX44 NC
CX42 NC
CX43 NC
RX59 NC
RX35 NC
CX27 NC
CVH
CX28 NC
CX29 NC
RX50 NC
RX47 NC
CX30 NC
CX31 NC
CX33 NC
CX32 NC
CX34 NC
RX41 NC
RX42 NC
QX11 NC
RX49 NC
CX37 NC
RX40 NC
RX43 NC
QX12 NC
DX12 NC
RX44 NC
QX09 NC
RX46 NC
RX53 NC
RX38 NC
QX08 NC
RX45 NC
RX52 NC
CX36 NC
CX40 NC
CX41 NC
RX55 NC
RX56 NC
RX58 NC
QX15 NC
QX17 NC
RX61 NC
RX60 NC
CX50 NC
CX51 NC
DX14 NC
D
E
F
6
7
8

Fig. 3-5-7

Output Circuit Diagram

① JX01 Composite video output D-5

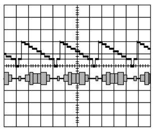


CVBS output
75Ω terminated
100% color bar

V: 500 mV/div
H: 20 µs/div

② JX01
(a) S-video output Y E-5
(b) S-video output C D-5

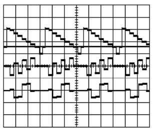
S-Y/C
75Ω terminated
100% color bar



(a) Y
(b) C
V: 500 mV/div
H: 20 µs/div

③ JX02 Y/CB/CR output E-5

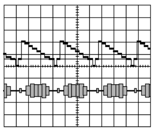
Component output
75Ω terminated
100% color bar
(Play)



Y
CB
CR
V: 500 mV/div
H: 20 µs/div

④ CNX01
(a) Pin ⑨ (Y) D-1
(b) Pin ⑪ (C) D-1

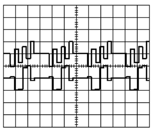
100% color bar
(Play)



(a)
(b)
V: 0.5 V/div
H: 20 µs/div

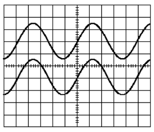
⑤ CNX01
(a) Pin ⑮ (CB) E-1
(b) Pin ⑰ (CR) E-1

100% color
bar (Play)



(a)
(b)
V: 0.5 V/div
H: 20 µs/div

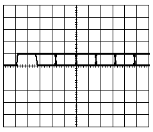
⑥ JY01 L ch output A-8
/ R ch output A-8
(1 kHz, FS)



L ch output

R ch output
V: 2 V/div
H: 200 µs/div

⑦ JY03 COAXIAL -DIGITAL OUTPUT C-8



75Ω terminated

V: 500 mV/div
H: 0.1 µs/div

IC

ICY03
LPF & AMP

1	*0*
2	*0*
3	*0*
4	*-10.0*
5	*0*
6	*0*
7	*0*
8	*9.5*

ICY09
BUFFER

1	*2.5*
2	*2.4*
3	*2.5*
4	*2.4*
5	*2.5*
6	*2.4*
7	*0*
8	*2.4*
9	*2.5*
10	*2.5*
11	*2.0*
12	*2.0*
13	*3.9*
14	*4.9*

Fig. 3-5-8

1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
F
G

5-5. Motor System Circuit Diagram

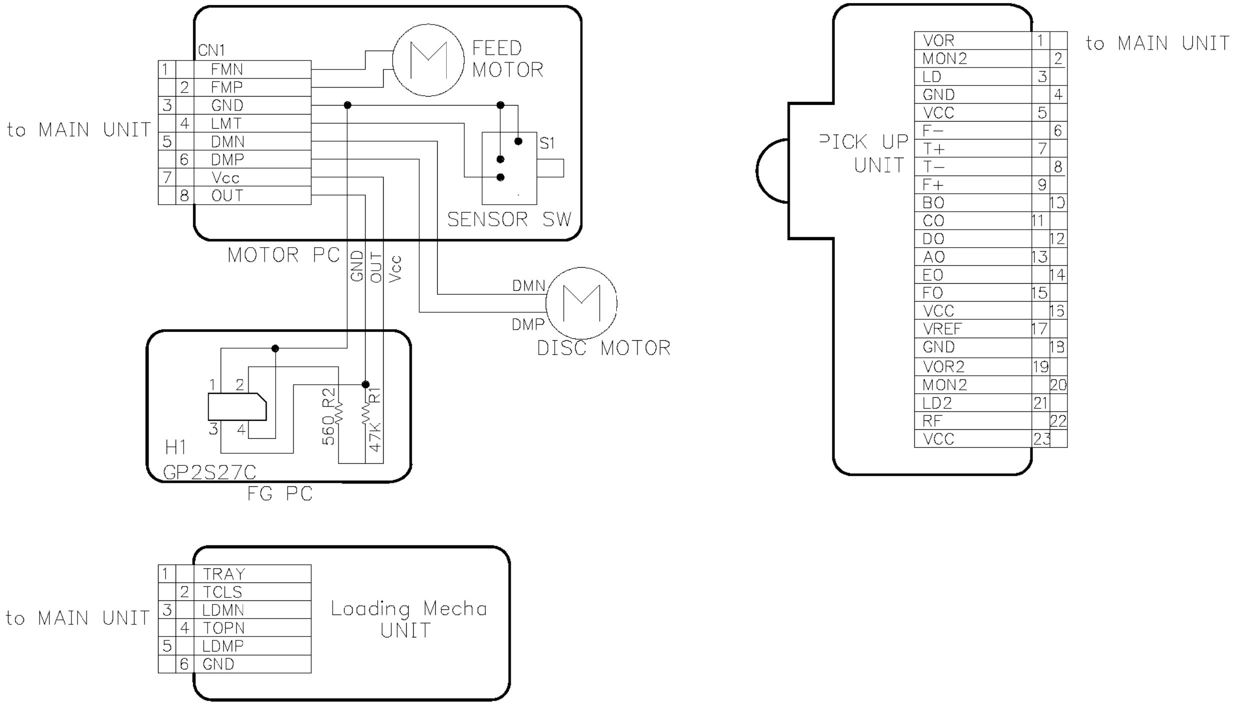

to MAIN UNIT
CN1
1 FMN
2 FMP
3 GND
4 LMT
5 DMN
6 DMP
7 Vcc
8 OUT
FEED MOTOR
S1
SENSOR SW
MOTOR PC
GND
OUT
Vcc
DMN
DMP
DISC MOTOR
H1
GP2S27C
1
2
3
4
560 R2
47K R1
FG PC
to MAIN UNIT
1 TRAY
2 TCLS
3 LDMN
4 TOPN
5 LDMP
6 GND
Loading Mecha UNIT
PICK UP UNIT
VOR 1
MON2 2
LD 3
GND 4
VCC 5
F− 6
T+ 7
T− 8
F+ 9
BO 10
CO 11
DO 12
AO 13
EO 14
FO 15
VCC 16
VREF 17
GND 18
VOR2 19
MON2 20
LD2 21
RF 22
VCC 23
to MAIN UNIT

Fig. 3-5-9

6. PC BOARDS

6-1. Power Supply PC Board

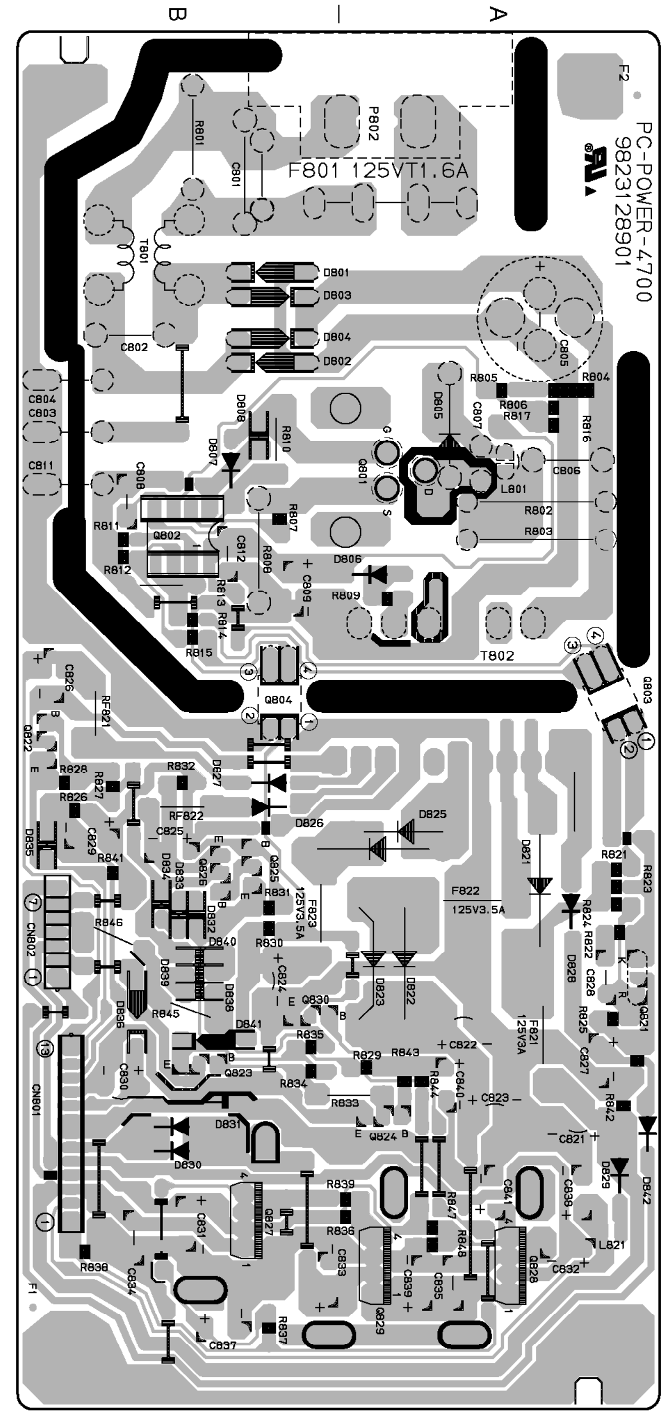

B
A
PC-POWER-4700
9823128901
F2
F1
P802
F801 125VT1.6A
F822
125V3.5A
F823
125V3.5A
F821
125V3A
T801
T802
CN801
CN802
Q801
Q802
Q803
Q804
D801
D802
D803
D804
C805
L801
L821
1
2
3
4
5

Fig. 3-6-1 EU02 Power Supply PC Board (Bottom side)

Part No.	Loca-tion	Part No.	Loca-tion
C801	B1	F822	A4
C802	B2	F823	B4
C803	B2	L801	A2
C804	B2	L821	A5
C805	A2	P802	A1
C806	A2	Q801	A2
C807	A2	Q802	B2
C808	B2	Q803	A3
C809	B3	Q804	B3
C811	B2	Q821	A4
C812	B2	Q822	B3
C821	A4	Q823	B4
C822	A4	Q824	A4
C823	A4	Q825	B4
C824	B4	Q826	B4
C825	B3	Q827	B5
C826	B3	Q828	A5
C827	A4	Q829	A5
C828	A4	Q830	B4
C829	B3	R801	B1
C830	B4	R802	A2
C831	B5	R803	A2
C832	A5	R804	A2
C833	B5	R805	A2
C834	B5	R806	A2
C835	A5	R807	B2
C837	B5	R808	B2
C838	A5	R809	A3
C839	A5	R810	B2
C840	A4	R811	B2
C841	A5	R812	B2
CN801	B4	R813	B3
CN802	B4	R814	B3
D801	B1	R815	B3
D802	B2	R816	A2
D803	B1	R817	A2
D804	B2	R821	A4
D805	A2	R822	A4
D806	B2	R823	A4
D807	B2	R824	A4
D808	B2	R825	A4
D821	A4	R826	B3
D822	A4	R827	B3
D823	A4	R828	B3
D824	B3	R829	A4
D825	A3	R830	B4
D826	B3	R831	B4
D827	B3	R832	B3
D828	A4	R833	B4
D829	A5	R834	B4
D830	B5	R835	B4
D831	B4	R836	B5
D832	B4	R837	B5
D833	B4	R838	B5
D834	B4	R839	B5
D835	B4	R841	B4
D836	B4	R842	A4
D838	B4	R843	A4
D839	B4	R844	A4
D840	B4	R845	B4
D841	B4	R846	B4
D842	A5	R847	A5
F1	B5	R848	A5
F2	A1	RF821	B3
F801	A1	RF822	B3
F821	A4	T801	B1
		T802	A3

6-2. Power Switch PC Board

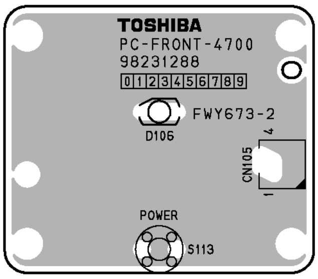

TOSHIBA
PC-FRONT-4700
98231288
0 1 2 3 4 5 6 7 8 9
FWY673-2
D106
CN105
4
1
POWER
S113

Fig. 3-6-2 EU04
Power Switch PC Board
(Top side)

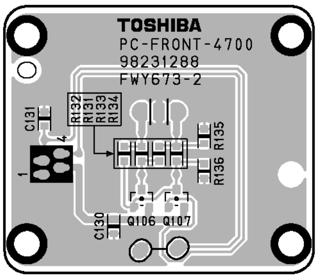

TOSHIBA
PC-FRONT-4700
98231288
FWY673-2
C131
R132
R131
R133
R134
R135
R136
4
1
C130
Q106
Q107

Fig. 3-6-3 EU04
Power Switch PC Board
(Bottom side)

6-3. Main PC Board

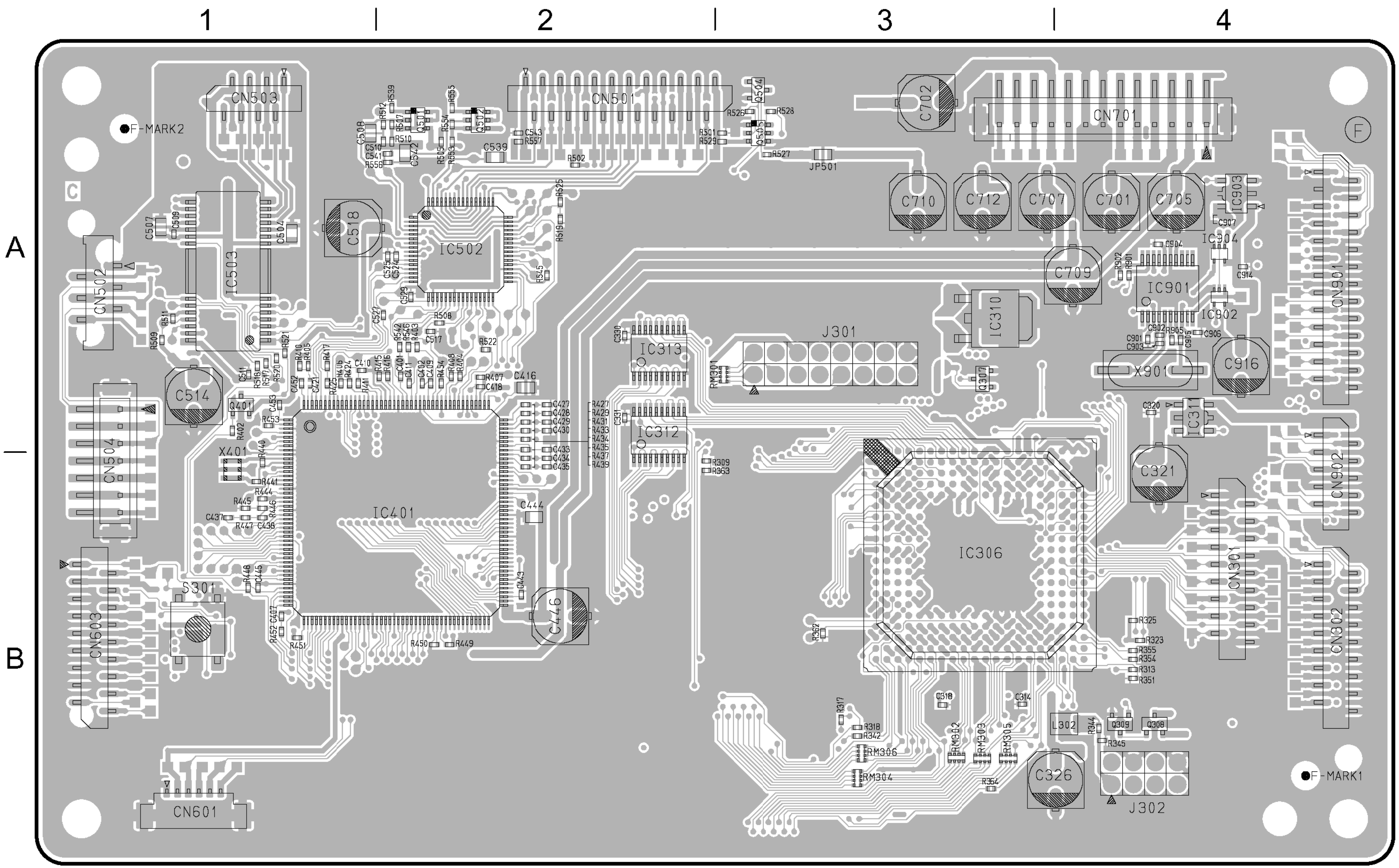

1
2
3
4
A
B
CN503
F-MARK2
CN502
IC503
C518
IC502
CN501
Q504
JP501
C702
CN701
C710
C712
C707
C701
C705
IC903
IC904
C709
IC901
IC902
CN901
IC310
J301
IC313
IC312
RM301
Q307
X901
C916
C514
Q401
CN504
X401
IC401
C416
C444
C446
IC311
C321
CN902
IC306
CN301
CN302
CN603
S301
CN601
L302
Q309
Q308
C326
J302
RM302
RM303
RM305
RM306
RM304
F-MARK1

Fig. 3-6-4 EU01 Main PC Board (Top pattern and Top parts location diagram)

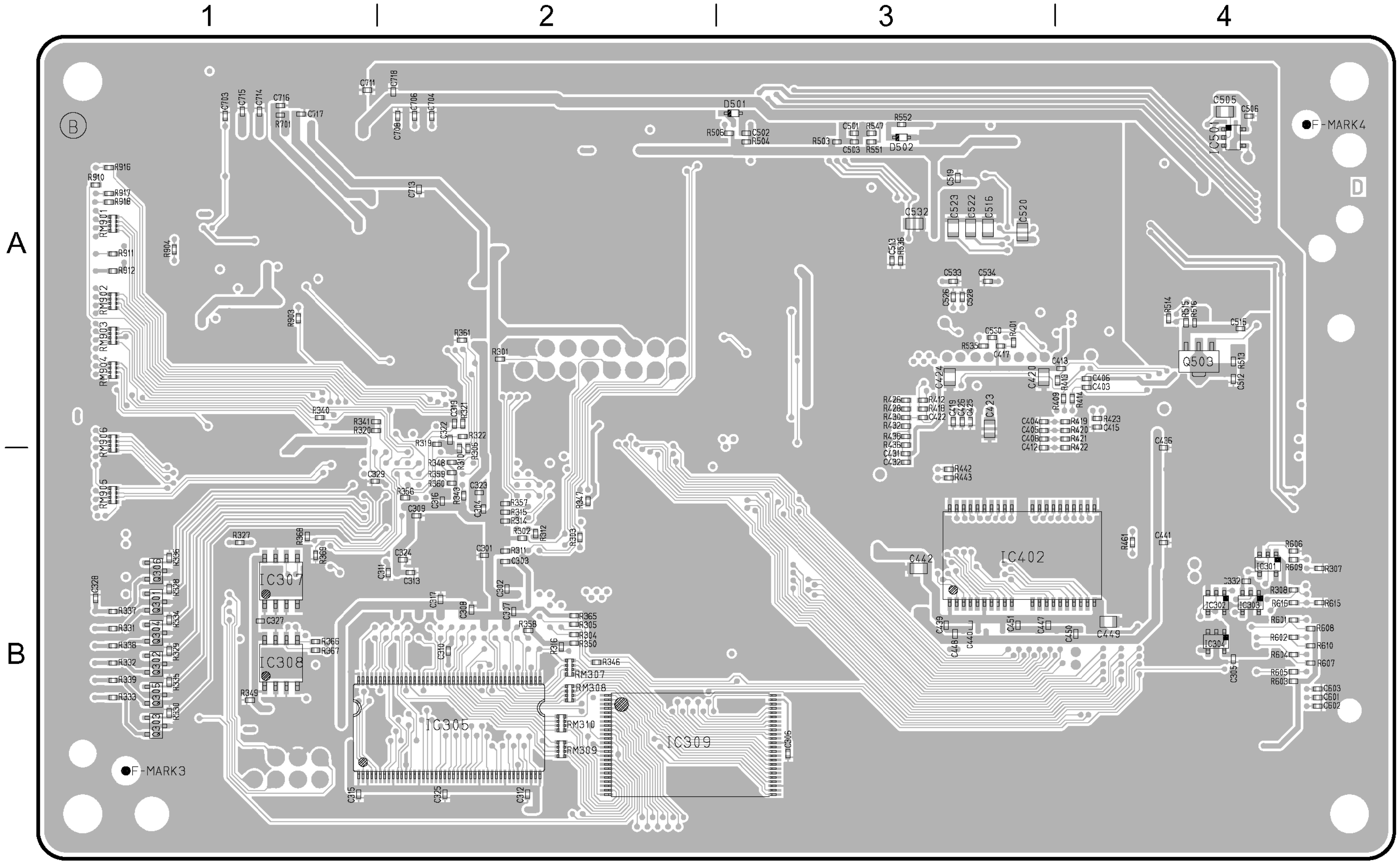

1
2
3
4
A
B
F-MARK3
F-MARK4
IC305
IC307
IC308
IC309
IC402
IC501
IC301
IC302
IC303
IC304
Q503
D501
D502
RM301
RM302
RM303
RM304
RM305
RM306
RM307
RM308
RM309
RM310
C532
C523
C522
C516
C520
C442
C449
C420
C423
C424
C505

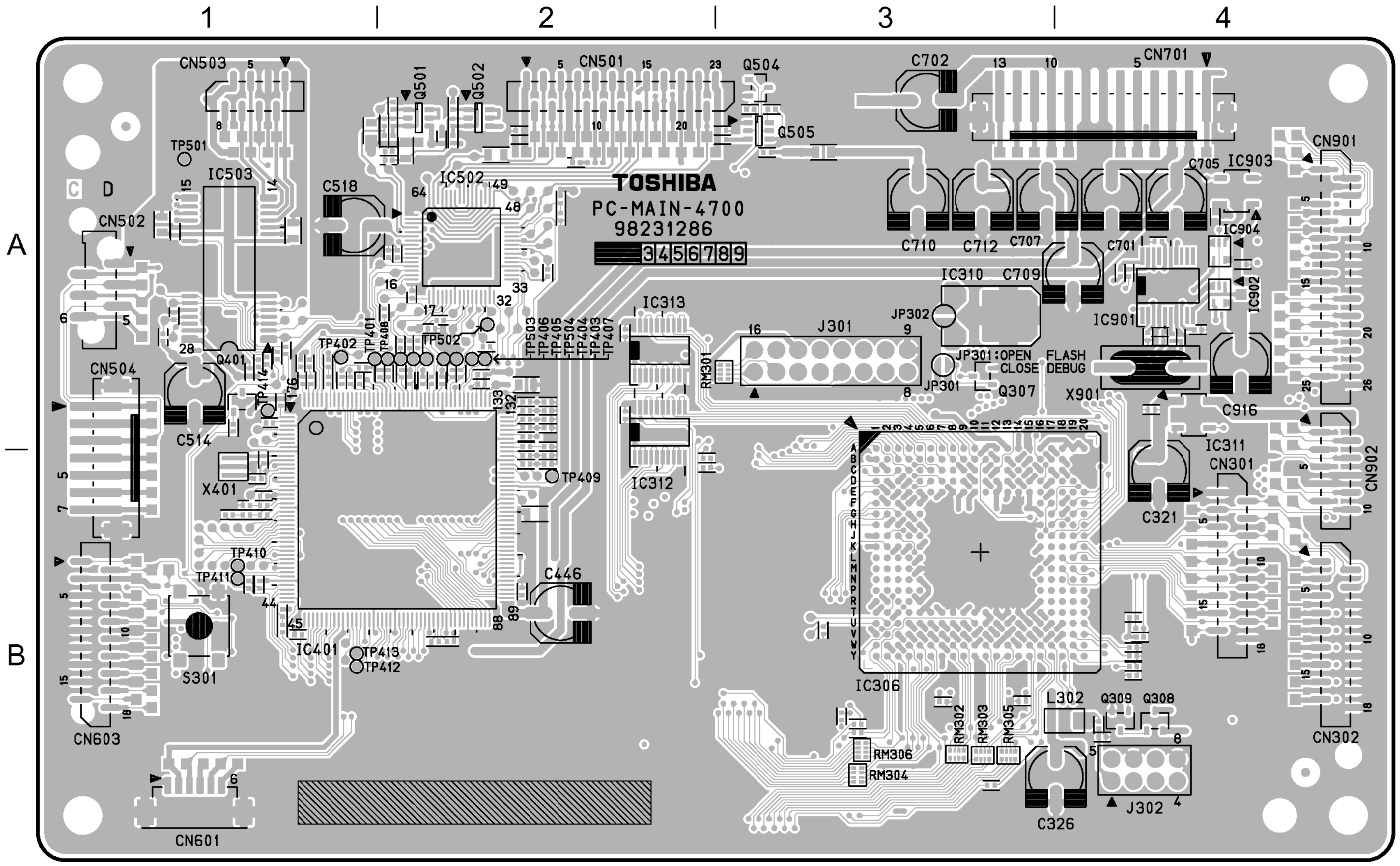
Fig. 3-6-5 EU01 Main PC Board (Bottom pattern and bottom parts location diagram)

Main PC Board (Top Side)

Part No.	Location
C314	B3
C318	B3
C320	A4
C321	B4
C326	B4
C330	A2
C331	A2
C401	A2
C402	A2
C407	B1
C409	A2
C410	A1
C411	A2
C416	A2
C418	A2
C421	A1
C427	A2
C428	A2
C429	A2
C430	A2
C433	A2
C434	B2
C435	B2
C437	B1
C438	B1
C443	B2
C444	B2
C445	B1
C446	B2
C452	A1
C453	A1
C504	A1
C507	A1
C508	A1
C509	A1
C510	A2
C511	A1
C514	A1
C517	A2
C518	A1
C524	A2
C525	A2
C527	A2
C529	A2
C539	A2
C541	A2
C542	A2
C543	A2
C701	A4
C702	A3
C705	A4
C707	A3
C709	A4
C710	A3
C712	A3
C901	A4
C902	A4
C903	A4
C904	A4
C905	A4
C906	A4
C907	A4
C914	A4
C916	A4
CN301	B4
CN302	B4
CN501	A2
CN502	A1
CN503	A1
CN504	B1
CN601	B1
CN603	B1
CN701	A4
CN901	A4
CN902	B4
IC306	B3
IC310	A3
IC311	A4
IC312	A2
IC313	A2
IC401	B2
IC502	A2
IC503	A1
IC901	A4
IC902	A4
IC903	A4
IC904	A4
J301	A3
J302	B4
JP301	A3
JP302	A3
JP501	A3
L302	B4
Q307	A3
Q308	B4
Q309	B4
Q401	A1
Q501	A2
Q502	A2
Q504	A3
Q505	A3
R309	B2
R313	B4
R317	B3
R318	B3
R323	B4
R325	B4
R342	B3
R344	B4
R345	B4
R351	B4
R354	B4
R355	B4
R362	B3
R363	B2
R364	B3
R402	A1
R403	A2
R404	A2
R405	A1
R406	A1
R407	A2
R408	A2
R410	A1
R411	A1
R415	A2
R416	A2
R417	A1
R424	A1
R425	A1
R427	A2
R429	A2
R431	A2
R433	A2
R434	A2
R435	A2
R437	B2
R439	B2
R440	B1
R441	B1
R444	B1
R445	B1
R446	B1
R447	B1
R448	B1
R449	B2
R450	B2
R451	B1
R452	B1
R453	A1
R454	A2
R501	A3
R502	A2
R505	A2
R507	A2
R508	A2
R509	A1
R510	A2
R511	A1
R512	A2
R517	A1
R518	A1
R519	A2
R520	A1
R521	A1
R522	A2
R525	A2
R526	A3
R527	A3
R528	A3
R529	A3
R539	A2
R542	A2
R545	A2
R546	A2
R553	A2
R554	A2
R555	A2
R556	A2
R557	A2
R901	A4
R902	A4
R905	A4
RM301	A3
RM302	B3
RM303	B3
RM304	B3
RM305	B3
RM306	B3
S301	B1
TP401	A1
TP402	A1
TP403	A2
TP404	A2
TP405	A2
TP406	A2
TP407	A2
TP408	A2
TP409	B2
TP410	B1
TP411	B1
TP412	B1
TP413	B1
TP414	A1
TP501	A1
TP502	A2
TP503	A2
TP504	A2
X401	B1
X901	A4

Main PC Board (Bottom Side)

Part No.	Location
C301	B2
C302	B2
C303	B2
C304	B2
C305	B4
C306	B3
C307	B2
C308	B2
C309	B2
C310	B2
C311	B2
C312	B2
C313	B2
C315	B1
C316	B2
C317	B2
C319	A2
C322	A2
C323	B2
C324	B2
C325	B2
C327	B1
C328	B1
C329	B1
C332	B4
C403	A4
C404	A3
C405	A3
C406	A4
C408	A3
C412	B3
C413	A4
C415	A4
C417	A3
C419	A3
C420	A3
C422	A3
C423	A3
C424	A3
C425	A3
C426	A3
C431	B3
C432	B3
C436	B4
C439	B3
C440	B3
C441	B4
C442	B3
C447	B3
C448	B3
C449	B4
C450	B4
C451	B3
C501	A3
C502	A3
C503	A3
C505	A4
C506	A4
C512	A4
C513	A3
C515	A4
C516	A3
C519	A3
C520	A3
C522	A3
C523	A3
C526	A3
C528	A3
C530	A3
C532	A3
C533	A3
C534	A3
C601	B4
C602	B4
C603	B4
C703	A1
C704	A2
C706	A2
C708	A2
C711	A1
C713	A2
C714	A1
C715	A1
C716	A1
C717	A1
C718	A2
D501	A3
D502	A3
IC301	B4
IC302	B4
IC303	B4
IC304	B4
IC305	B2
IC307	B1
IC308	B1
IC309	B2
IC402	B3
IC501	A4
Q301	B1
Q302	B1
Q303	B1
Q304	B1
Q305	B1
Q306	B1
Q503	A4
R301	A2
R302	B2
R303	B2
R304	B2
R305	B2
R306	B2
R307	B4
R308	B4
R310	B2
R311	B2
R312	B2
R314	B2
R315	B2
R316	B2
R319	A2
R320	A1
R321	A2
R322	A2
R327	B1
R328	B1
R329	B1
R330	B1
R331	B1
R332	B1
R333	B1
R334	B1
R335	B1
R336	B1
R337	B1
R338	B1
R339	B1
R340	A1
R341	A1
R343	B2
R346	B2
R347	B2
R348	B2
R349	B1
R350	B2
R356	B2
R357	B2
R358	B2
R359	B2
R360	B2
R361	A2
R365	B2
R366	B1
R367	B1
R368	B1
R369	B1
R401	A3
R409	A4
R412	A3
R413	A4
R414	A4
R418	A3
R419	A4
R420	A4
R421	A4
R422	B4
R423	A4
R426	A3
R428	A3
R430	A3
R432	A3
R436	A3
R438	A3
R442	B3
R443	B3
R461	B4
R503	A3
R504	A3
R506	A3
R513	A4
R514	A4
R515	A4
R516	A4
R535	A3
R536	A3
R547	A3
R551	A3
R552	A3
R601	B4
R602	B4
R603	B4
R604	B4
R605	B4
R606	B4
R607	B4
R608	B4
R609	B4
R610	B4
R615	B4
R616	B4
R701	A1
R903	A1
R904	A1
R910	A1
R911	A1
R912	A1
R916	A1
R917	A1
R918	A1
RM307	B2
RM308	B2
RM309	B2
RM310	B2
RM901	A1
RM902	A1
RM903	A1
RM904	A1
RM905	B1
RM906	A1



1
2
3
4
A
B
C
D
TOSHIBA
PC-MAIN-4700
98231286
3456789
CN503
CN501
CN701
CN901
CN902
CN302
CN301
CN502
CN504
CN603
CN601
IC503
IC502
IC401
IC313
IC312
IC306
IC310
IC901
IC902
IC903
IC904
IC311
Q501
Q502
Q504
Q505
Q401
Q307
Q309
Q308
C518
C514
C446
C702
C710
C712
C707
C709
C701
C705
C916
C321
C326
J301
J302
JP302
JP301
JP301:OPEN
CLOSE
FLASH
DEBUG
X401
X901
S301
L302
RM301
RM302
RM303
RM305
RM306
RM304
TP501
TP401
TP402
TP408
TP502
TP503
TP406
TP405
TP504
TP404
TP403
TP407
TP409
TP410
TP411
TP412
TP413
TP414

Fig. 3-6-6 EU01 Main PC Board (Top pattern, character/symbol)

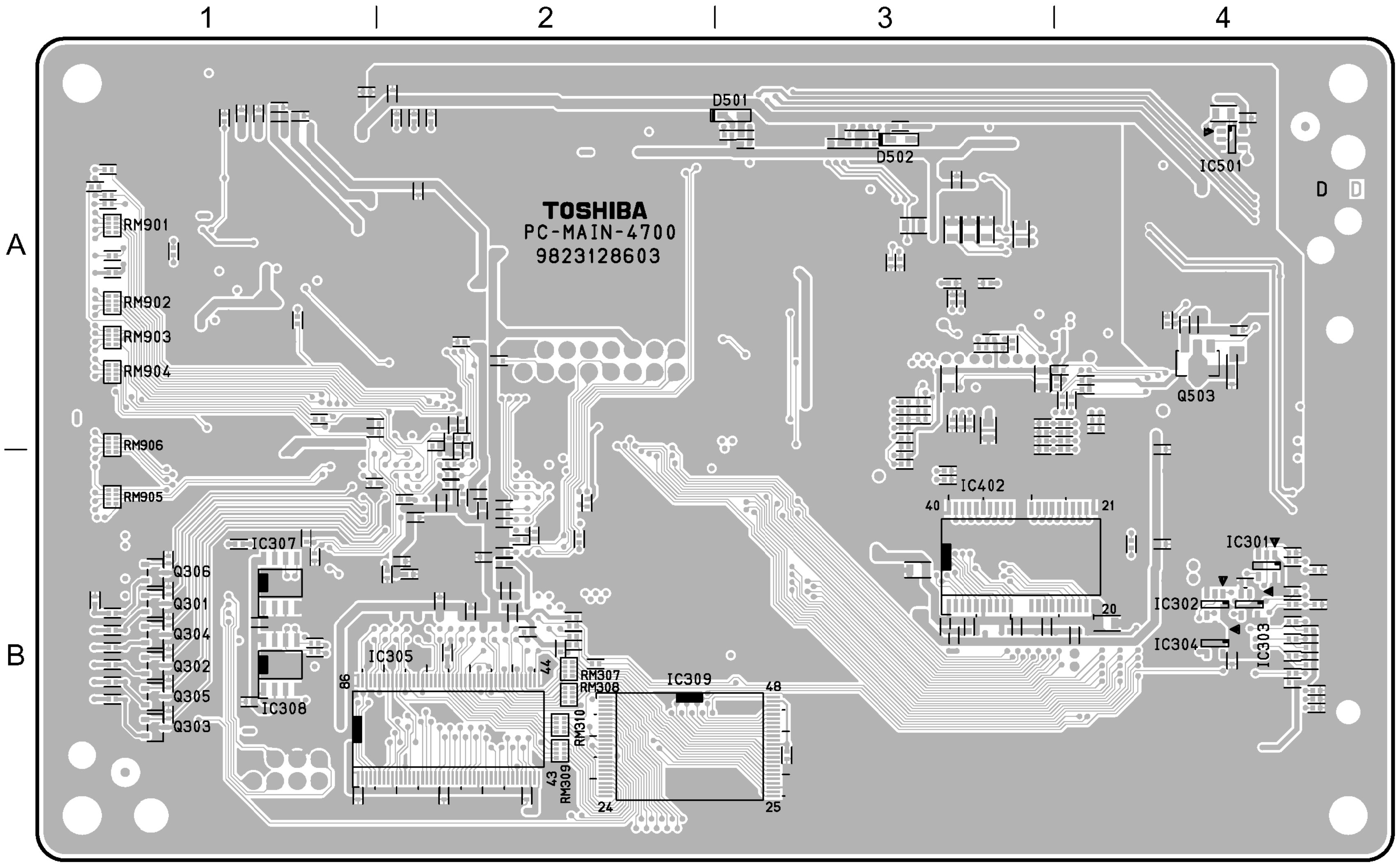

1
2
3
4
A
B
TOSHIBA
PC-MAIN-4700
9823128603
D501
D502
IC501
D
Q503
IC402
40
21
20
IC301
IC302
IC304
IC303
RM901
RM902
RM903
RM904
RM906
RM905
IC307
Q306
Q301
Q304
Q302
Q305
Q303
IC308
IC305
86
44
43
RM307
RM308
RM310
RM309
IC309
48
24
25

Fig. 3-6-7 EU01 Main PC Board (Bottom pattern, character/symbol)

6-4. Output PC Board

Note that the output PC board has two types.

6-4-1. Output PC Board (No. 9823128700)

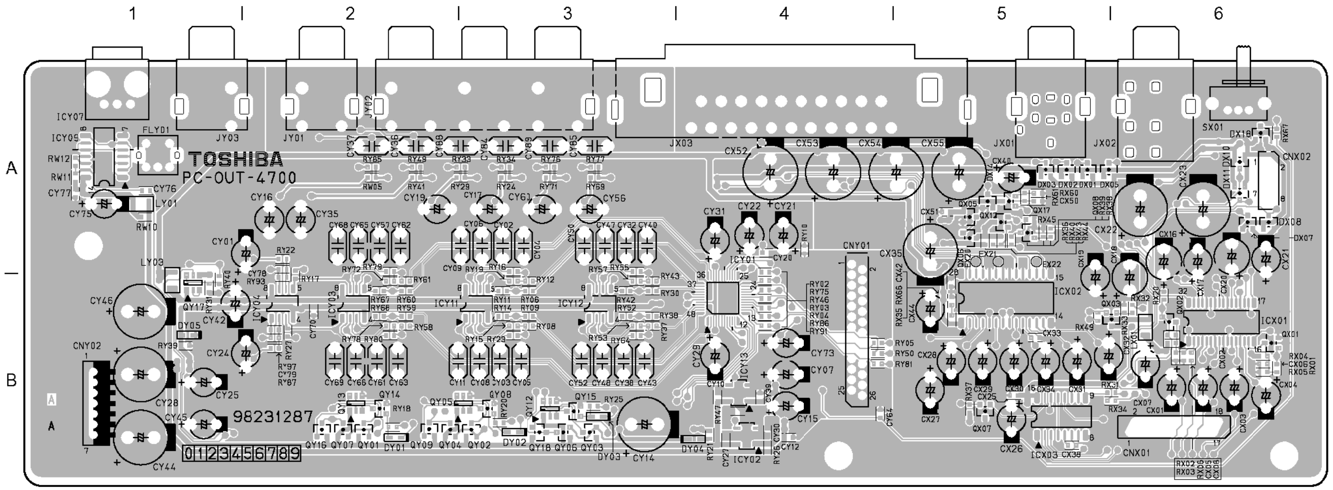


Fig. 3-6-8 EU05 Output PC Board (Top side)

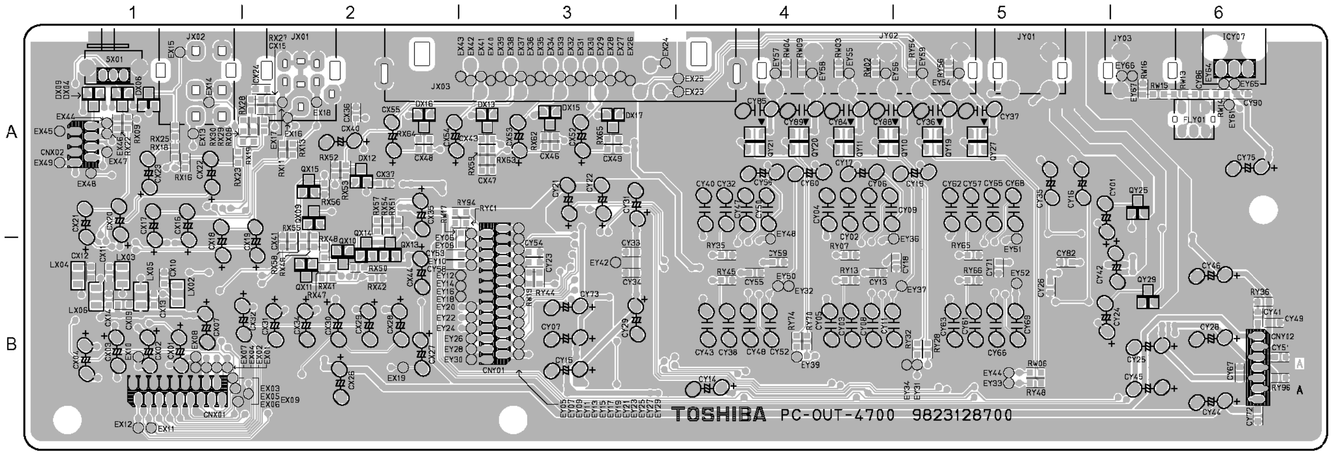


Fig. 3-6-9 EU05 Output PC Board (Bottom side)

Part No.	Location	Part No.	Location	Part No.	Location	Part No.	Location	Part No.	Location
CNX01	B6	CY14	B3	DX01	A5	QY06	B3	RY18	B2
CNX02	A6	CY15	B4	DX02	A5	QY07	B2	RY19	B3
CNY01	B4	CY16	A2	DX03	A5	QY08	B3	RY20	B3
CNY02	B1	CY17	A3	DX05	A5	QY09	B2	RY21	B4
CX01	B6	CY19	A2	DX07	A6	QY12	B3	RY22	A2
CX02	B6	CY20	A4	DX08	A6	QY13	B2	RY23	B3
CX03	B6	CY21	A4	DX10	A6	QY14	B2	RY24	A3
CX04	B6	CY22	A4	DX11	A6	QY15	B3	RY25	B3
CX05	B6	CY24	B2	DX14	A5	QY16	B2	RY26	B4
CX06	B6	CY25	B1	DX18	A6	QY17	B1	RY27	B2
CX07	B6	CY27	B4	DY01	B2	QY18	B3	RY29	A3
CX08	B6	CY28	B1	DY02	B3	RW05	A2	RY30	B3
CX16	A6	CY29	B4	DY03	B3	RW10	A1	RY31	B1
CX17	A6	CY30	B4	DY04	B4	RW11	A1	RY33	A3
CX18	B6	CY31	A4	DY05	B1	RW12	A1	RY34	A3
CX19	B5	CY32	A3	EX20	A5	RX01	B6	RY37	B3
CX20	A6	CY35	A2	EX21	A5	RX02	B6	RY38	B3
CX21	A6	CY36	A2	EX22	A5	RX03	B6	RY39	B1
CX22	A6	CY37	A2	FLY01	A1	RX04	B6	RY40	B1
CX23	A6	CY38	B3	ICX01	B6	RX05	B6	RY41	A2
CX25	B5	CY39	B4	ICX02	B5	RX06	B6	RY42	B3
CX26	B5	CY40	A3	ICX03	B5	RX20	B6	RY43	B3
CX27	B5	CY42	B1	ICY01	B4	RX31	B6	RY46	B4
CX28	B5	CY43	B3	ICY02	B4	RX32	B6	RY47	B4
CX29	B5	CY44	B1	ICY03	B2	RX33	B6	RY49	A2
CX30	B5	CY45	B1	ICY04	B2	RX34	B6	RY50	B4
CX31	B5	CY46	B1	ICY07	A1	RX35	B5	RY52	B3
CX32	B5	CY47	A3	ICY09	A1	RX36	A5	RY53	B3
CX33	B5	CY48	B3	ICY11	B3	RX37	B5	RY55	A3
CX34	B5	CY50	A3	ICY12	B3	RX38	A5	RY57	B3
CX35	A5	CY52	B3	ICY13	B4	RX39	A5	RY58	B2
CX38	B5	CY56	A3	JX01	A5	RX40	A5	RY59	B2
CX40	A5	CY57	A2	JX02	A6	RX43	A5	RY60	B2
CX42	B5	CY60	A3	JX03	A4	RX44	A5	RY61	B2
CX44	B5	CY61	B2	JY01	A2	RX45	A5	RY64	B3
CX50	A5	CY62	A2	JY02	A3	RX49	B5	RY67	B2
CX51	A5	CY63	B2	JY03	A1	RX60	A5	RY68	B2
CX52	A4	CY64	B4	LX01	B6	RX61	A5	RY69	A3
CX53	A4	CY65	A2	LY01	A1	RX66	B5	RY71	A3
CX54	A5	CY66	B2	LY03	B1	RX67	A6	RY72	B2
CX55	A5	CY68	A2	QX01	B6	RY02	A4	RY75	B4
CY01	A2	CY69	B2	QX02	B6	RY03	B4	RY76	A3
CY02	A3	CY70	B2	QX03	B6	RY04	B4	RY77	A3
CY03	B3	CY73	B4	QX05	A5	RY05	B4	RY78	B2
CY04	A3	CY75	A1	QX06	A5	RY06	B3	RY79	A2
CY05	B3	CY76	A1	QX07	B5	RY08	B3	RY80	B2
CY06	A3	CY77	A1	QX08	A5	RY09	B3	RY81	B4
CY07	B4	CY78	A2	QX12	A5	RY10	A4	RY85	A2
CY08	B3	CY79	B2	QX17	A5	RY11	B3	RY86	B4
CY09	A3	CY84	A3	QY01	B2	RY12	B3	RY87	B2
CY10	B4	CY85	A3	QY02	B3	RY14	B3	RY91	B4
CY11	B2	CY88	A3	QY03	B3	RY15	B3	RY93	B2
CY12	B4	CY89	A3	QY04	B2	RY16	A3	RY97	B2
				QY05	B3	RY17	B2	SX01	A6

Part No.	Location	Part No.	Location	Part No.	Location	Part No.	Location	Part No.	Location
CX09	B1	EX02	B1	EY05	A3	EY61	A6	RX22	A1
CX10	B1	EX03	B1	EY06	A3	EY64	A6	RX23	A1
CX11	B1	EX04	B1	EY07	B3	EY65	A6	RX25	A1
CX12	B1	EX05	B1	EY08	B3	EY66	A6	RX27	A2
CX13	B1	EX06	B1	EY09	B3	EY67	A6	RX28	A2
CX14	B1	EX07	B1	EY10	B3	LX02	B1	RX29	A2
CX15	A2	EX08	B1	EY11	B3	LX03	B1	RX30	A1
CX24	A2	EX09	B2	EY12	B3	LX04	B1	RX41	B2
CX36	A2	EX10	B1	EY13	B3	LX05	B1	RX42	B2
CX37	A2	EX11	B1	EY14	B3	LX06	B1	RX46	B2
CX41	B2	EX12	B1	EY15	B3	QX09	A2	RX47	B2
CX43	A3	EX13	A1	EY16	B3	QX10	B2	RX48	B2
CX46	A3	EX14	A1	EY17	B3	QX11	B2	RX50	B2
CX47	A3	EX15	A1	EY18	B3	QX13	B2	RX51	A2
CX48	A2	EX16	A2	EY19	B3	QX14	B2	RX52	A2
CX49	A3	EX17	A2	EY20	B3	QX15	A2	RX53	A2
CY13	B4	EX18	A2	EY21	B3	QY10	A4	RX54	A2
CY18	B5	EX19	B2	EY22	B3	QY11	A4	RX55	B2
CY23	B3	EX23	A4	EY23	B3	QY19	A5	RX56	A2
CY26	B5	EX24	A3	EY24	B3	QY20	A4	RX57	A2
CY33	B3	EX25	A4	EY25	B3	QY21	A4	RX58	B2
CY34	B3	EX26	A3	EY26	B3	QY25	A6	RX59	A3
CY41	B6	EX27	A3	EY27	B3	QY27	A5	RX62	A3
CY49	B6	EX28	A3	EY28	B3	QY29	B6	RX63	A3
CY51	B6	EX29	A3	EY29	B3	RW02	A4	RX64	A2
CY53	B2	EX30	A3	EY30	B3	RW03	A4	RX65	A3
CY54	B3	EX31	A3	EY31	B5	RW04	A4	RY01	A3
CY55	B4	EX32	A3	EY32	B4	RW06	B5	RY07	B4
CY58	B2	EX33	A3	EY33	B5	RW09	A4	RY13	B4
CY59	B4	EX34	A3	EY34	B5	RW13	A6	RY28	B5
CY67	B6	EX35	A3	EY36	B5	RW14	A6	RY32	B5
CY71	B5	EX36	A3	EY37	B5	RW15	A6	RY35	B4
CY72	B6	EX37	A3	EY39	B4	RW16	A6	RY36	B6
CY82	B5	EX38	A3	EY42	B3	RW17	B3	RY44	B3
CY86	A6	EX39	A3	EY44	B5	RW19	B3	RY45	B4
CY90	A6	EX40	A3	EY48	B4	RX07	A2	RY48	B5
DX04	A1	EX41	A3	EY50	B4	RX08	A2	RY54	A5
DX06	A1	EX42	A3	EY51	B5	RX09	A1	RY56	A5
DX09	A1	EX43	A3	EY52	B5	RX10	A2	RY65	B5
DX12	A2	EX44	A1	EY54	A5	RX11	A2	RY66	B5
DX13	A3	EX45	A1	EY55	A4	RX13	A2	RY70	B4
DX15	A3	EX46	A1	EY56	A4	RX16	A1	RY74	B4
DX16	A2	EX47	A1	EY57	A4	RX17	A2	RY94	A3
DX17	A3	EX48	A1	EY58	A4	RX18	A1	RY96	B6
EX01	B1	EX49	A1	EY59	A5	RX19	A2		

6-4-2. Output PC Board (No. 9823128701)

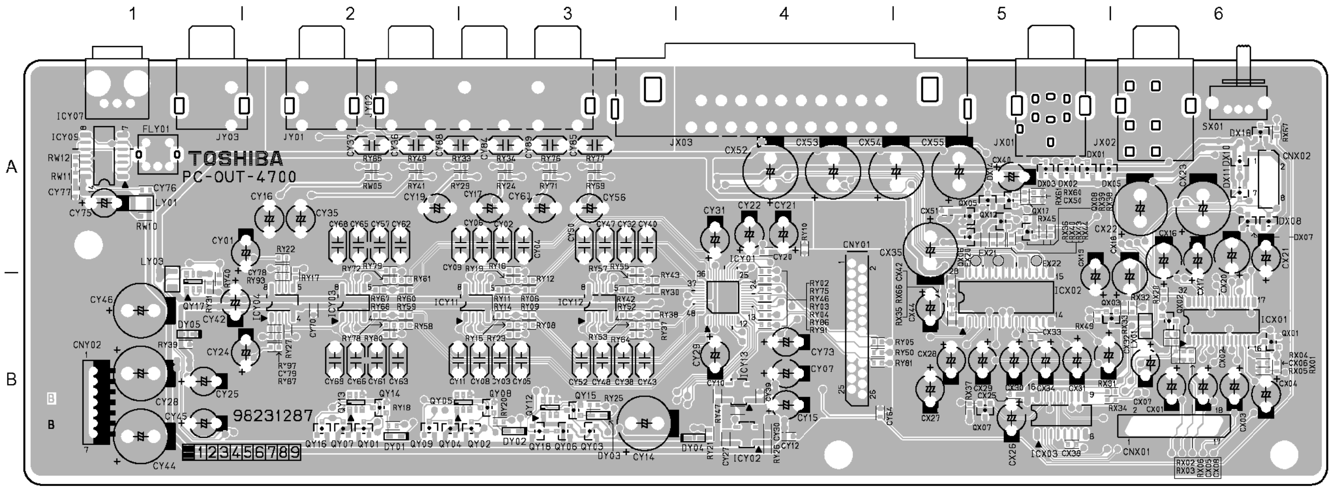


Fig. 3-6-10 EU05 Output PC Board (Top side)

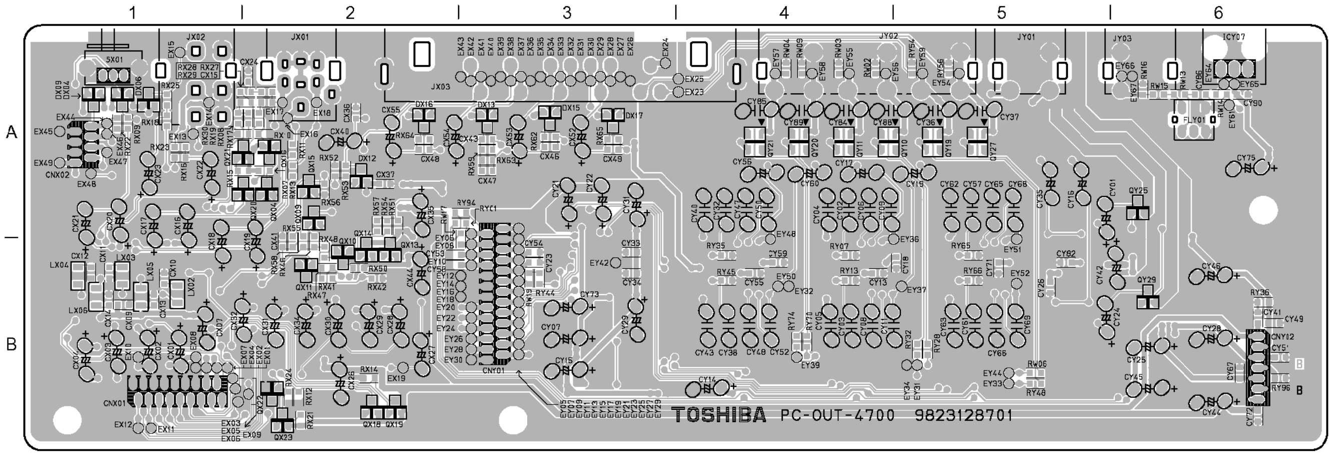


Fig. 3-6-11 EU05 Output PC Board (Bottom side)

Part No.	Location	Part No.	Location	Part No.	Location	Part No.	Location	Part No.	Location
CNX01	B6	CY14	B3	DX01	A5	QY06	B3	RY18	B2
CNX02	A6	CY15	B4	DX02	A5	QY07	B2	RY19	B3
CNY01	B4	CY16	A2	DX03	A5	QY08	B3	RY20	B3
CNY02	B1	CY17	A3	DX05	A5	QY09	B2	RY21	B4
CX01	B6	CY19	A2	DX07	A6	QY12	B3	RY22	A2
CX02	B6	CY20	A4	DX08	A6	QY13	B2	RY23	B3
CX03	B6	CY21	A4	DX10	A6	QY14	B2	RY24	A3
CX04	B6	CY22	A4	DX11	A6	QY15	B3	RY25	B3
CX05	B6	CY24	B2	DX14	A5	QY16	B2	RY26	B4
CX06	B6	CY25	B1	DX18	A6	QY17	B1	RY27	B2
CX07	B6	CY27	B4	DY01	B2	QY18	B3	RY29	A3
CX08	B6	CY28	B1	DY02	B3	RW05	A2	RY30	B3
CX16	A6	CY29	B4	DY03	B3	RW10	A1	RY31	B1
CX17	A6	CY30	B4	DY04	B4	RW11	A1	RY33	A3
CX18	B6	CY31	A4	DY05	B1	RW12	A1	RY34	A3
CX19	B5	CY32	A3	EX20	A5	RX01	B6	RY37	B3
CX20	A6	CY35	A2	EX21	A5	RX02	B6	RY38	B3
CX21	A6	CY36	A2	EX22	A5	RX03	B6	RY39	B1
CX22	A6	CY37	A2	FLY01	A1	RX04	B6	RY40	B1
CX23	A6	CY38	B3	ICX01	B6	RX05	B6	RY41	A2
CX25	B5	CY39	B4	ICX02	B5	RX06	B6	RY42	B3
CX26	B5	CY40	A3	ICX03	B5	RX20	B6	RY43	B3
CX27	B5	CY42	B1	ICY01	B4	RX31	B6	RY46	B4
CX28	B5	CY43	B3	ICY02	B4	RX32	B6	RY47	B4
CX29	B5	CY44	B1	ICY03	B2	RX33	B6	RY49	A2
CX30	B5	CY45	B1	ICY04	B2	RX34	B6	RY50	B4
CX31	B5	CY46	B1	ICY07	A1	RX35	B5	RY52	B3
CX32	B5	CY47	A3	ICY09	A1	RX36	A5	RY53	B3
CX33	B5	CY48	B3	ICY11	B3	RX37	B5	RY55	A3
CX34	B5	CY50	A3	ICY12	B3	RX38	A5	RY57	B3
CX35	A5	CY52	B3	ICY13	B4	RX39	A5	RY58	B2
CX38	B5	CY56	A3	JX01	A5	RX40	A5	RY59	B2
CX40	A5	CY57	A2	JX02	A6	RX43	A5	RY60	B2
CX42	B5	CY60	A3	JX03	A4	RX44	A5	RY61	B2
CX44	B5	CY61	B2	JY01	A2	RX45	A5	RY64	B3
CX50	A5	CY62	A2	JY02	A3	RX49	B5	RY67	B2
CX51	A5	CY63	B2	JY03	A1	RX60	A5	RY68	B2
CX52	A4	CY64	B4	LX01	B6	RX61	A5	RY69	A3
CX53	A4	CY65	A2	LY01	A1	RX66	B5	RY71	A3
CX54	A5	CY66	B2	LY03	B1	RX67	A6	RY72	B2
CX55	A5	CY68	A2	QX01	B6	RY02	A4	RY75	B4
CY01	A2	CY69	B2	QX02	B6	RY03	B4	RY76	A3
CY02	A3	CY70	B2	QX03	B6	RY04	B4	RY77	A3
CY03	B3	CY73	B4	QX05	A5	RY05	B4	RY78	B2
CY04	A3	CY75	A1	QX06	A5	RY06	B3	RY79	A2
CY05	B3	CY76	A1	QX07	B5	RY08	B3	RY80	B2
CY06	A3	CY77	A1	QX08	A5	RY09	B3	RY81	B4
CY07	B4	CY78	A2	QX12	A5	RY10	A4	RY85	A2
CY08	B3	CY79	B2	QX17	A5	RY11	B3	RY86	B4
CY09	A3	CY84	A3	QY01	B2	RY12	B3	RY87	B2
CY10	B4	CY85	A3	QY02	B3	RY14	B3	RY91	B4
CY11	B2	CY88	A3	QY03	B3	RY15	B3	RY93	B2
CY12	B4	CY89	A3	QY04	B2	RY16	A3	RY97	B2
				QY05	B3	RY17	B2	SX01	A6

Part No.	Location	Part No.	Location	Part No.	Location	Part No.	Location	Part No.	Location
CX09	B1	EX04	B1	EY09	B3	LX03	B1	RX18	A1
CX10	B1	EX05	B1	EY10	B3	LX04	B1	RX19	A2
CX11	B1	EX06	B1	EY11	B3	LX05	B1	RX21	B2
CX12	B1	EX07	B1	EY12	B3	LX06	B1	RX22	A1
CX13	B1	EX08	B1	EY13	B3	QX04	A2	RX23	A1
CX14	B1	EX09	B2	EY14	B3	QX09	A2	RX24	B2
CX15	A2	EX10	B1	EY15	B3	QX10	B2	RX25	A1
CX24	A2	EX11	B1	EY16	B3	QX11	B2	RX27	A2
CX36	A2	EX12	B1	EY17	B3	QX13	B2	RX28	A2
CX37	A2	EX13	A1	EY18	B3	QX14	B2	RX29	A2
CX41	B2	EX14	A1	EY19	B3	QX15	A2	RX30	A1
CX43	A3	EX15	A1	EY20	B3	QX16	A2	RX41	B2
CX46	A3	EX16	A2	EY21	B3	QX18	B2	RX42	B2
CX47	A3	EX17	A2	EY22	B3	QX19	B2	RX46	B2
CX48	A2	EX18	A2	EY23	B3	QX20	A2	RX47	B2
CX49	A3	EX19	B2	EY24	B3	QX21	A2	RX48	B2
CY13	B4	EX23	A4	EY25	B3	QX22	B2	RX50	B2
CY18	B5	EX24	A3	EY26	B3	QX23	B2	RX51	A2
CY23	B3	EX25	A4	EY27	B3	QY10	A4	RX52	A2
CY26	B5	EX26	A3	EY28	B3	QY11	A4	RX53	A2
CY33	B3	EX27	A3	EY29	B3	QY19	A5	RX54	A2
CY34	B3	EX28	A3	EY30	B3	QY20	A4	RX55	B2
CY41	B6	EX29	A3	EY31	B5	QY21	A4	RX56	A2
CY49	B6	EX30	A3	EY32	B4	QY25	A6	RX57	A2
CY51	B6	EX31	A3	EY33	B5	QY27	A5	RX58	B2
CY53	B2	EX32	A3	EY34	B5	QY29	B6	RX59	A3
CY54	B3	EX33	A3	EY36	B5	RW02	A4	RX62	A3
CY55	B4	EX34	A3	EY37	B5	RW03	A4	RX63	A3
CY58	B2	EX35	A3	EY39	B4	RW04	A4	RX64	A2
CY59	B4	EX36	A3	EY42	B3	RW06	B5	RX65	A3
CY67	B6	EX37	A3	EY44	B5	RW09	A4	RY01	A3
CY71	B5	EX38	A3	EY48	B4	RW13	A6	RY07	B4
CY72	B6	EX39	A3	EY50	B4	RW14	A6	RY13	B4
CY82	B5	EX40	A3	EY51	B5	RW15	A6	RY28	B5
CY86	A6	EX41	A3	EY52	B5	RW16	A6	RY32	B5
CY90	A6	EX42	A3	EY54	A5	RW17	B3	RY35	B4
DX04	A1	EX43	A3	EY55	A4	RW19	B3	RY36	B6
DX06	A1	EX44	A1	EY56	A4	RX07	A2	RY44	B3
DX09	A1	EX45	A1	EY57	A4	RX08	A2	RY45	B4
DX12	A2	EX46	A1	EY58	A4	RX09	A1	RY48	B5
DX13	A3	EX47	A1	EY59	A5	RX10	A2	RY54	A5
DX15	A3	EX48	A1	EY61	A6	RX11	A2	RY56	A5
DX16	A2	EX49	A1	EY64	A6	RX12	B2	RY65	B5
DX17	A3	EY05	A3	EY65	A6	RX13	A2	RY66	B5
EX01	B1	EY06	A3	EY66	A6	RX14	B2	RY70	B4
EX02	B1	EY07	B3	EY67	A6	RX15	A2	RY74	B4
EX03	B1	EY08	B3	LX02	B1	RX16	A1	RY94	A3
						RX17	A2	RY96	B6

6-5. Front Display PC Board

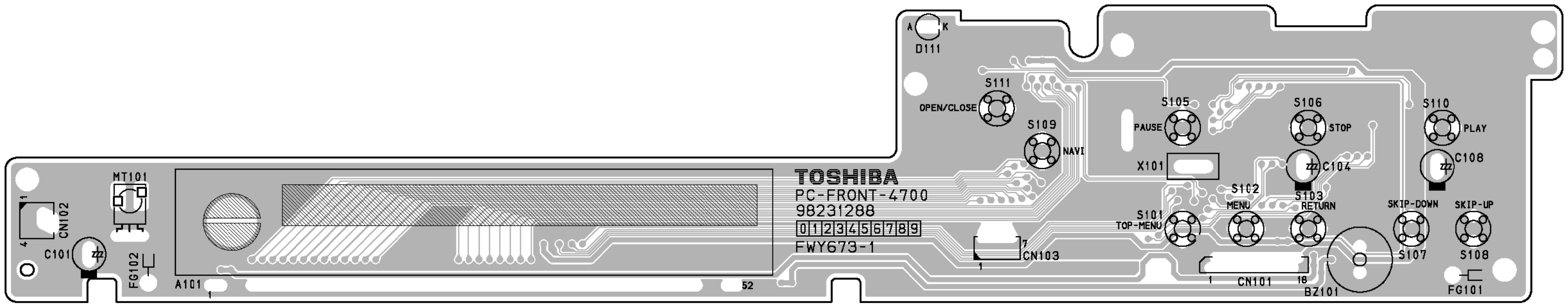

D111
A
K
S111
OPEN/CLOSE
S109
NAVI
S105
PAUSE
X101
S106
STOP
C104
S110
PLAY
C108
S101
TOP-MENU
S102
MENU
S103
RETURN
SKIP-DOWN
S107
SKIP-UP
S108
FG101
CN101
BZ101
CN103
TOSHIBA
PC-FRONT-4700
98231288
0 1 2 3 4 5 6 7 8 9
FWY673-1
MT101
CN102
C101
FG102
A101
52

Fig. 3-6-12 EU03 Front Display PC Board (Top Side)

Part No.	Location
A101	C2
BZ101	C8
C101	C1
C104	B8
C108	B8
CN101	C7
CN102	C1
CN103	C6
D111	B6
FG101	C8
FG102	C2
MT101	B2
S101	C7
S102	B7
S103	C8
S105	B7
S106	B8
S107	C8
S108	C8
S109	B6
S110	B8
S111	B6
X101	B7

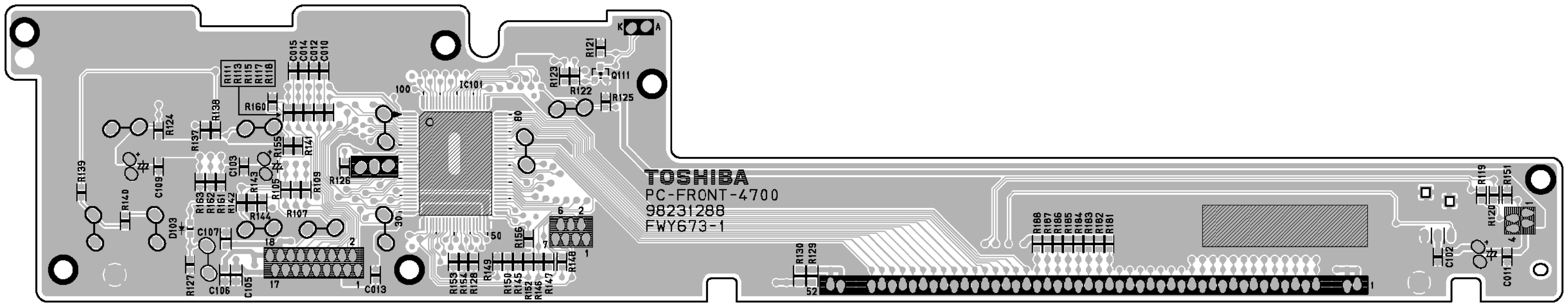

TOSHIBA
PC-FRONT-4700
98231288
FWY673-1
IC101
Q111
R121
R122
R123
R125
R111
R113
R115
R117
R118
C015
C014
C012
C010
R160
R124
R137
R138
R139
R140
C109
D103
R155
R141
R126
R109
R105
R143
R144
R107
C103
R163
R162
R161
R142
C107
C106
C105
R127
C013
R153
R154
R128
R149
R150
R145
R146
R147
R156
R148
R130
R129
R188
R187
R186
R185
R184
R183
R182
R181
R119
R120
R151
C102
C011
100
80
50
30
52

Fig. 3-6-13 EU03 Front Display PC Board (Bottom Side)

Part No.	Location	Part No.	Location
C010	D3	R129	F5
C011	F9	R130	F5
C012	D3	R137	E2
C013	F3	R138	E2
C014	D3	R139	E1
C015	D3	R140	E2
C102	F8	R141	E3
C103	E2	R142	E2
C105	F2	R143	E2
C106	F2	R144	E2
C107	E2	R145	F4
C109	E2	R146	F4
D103	E2	R147	F4
IC101	E3	R148	F4
Q111	E4	R149	F4
R105	E2	R150	F4
R107	E3	R151	E9
R109	E3	R152	F4
R111	E2	R153	F3
R113	E2	R154	F3
R115	E2	R155	E2
R117	E2	R156	E4
R118	E2	R161	E2
R119	E9	R162	E2
R120	E9	R163	E2
R121	D4	R169	E2
R122	E4	R181	E7
R123	E4	R182	E7
R124	E2	R183	E7
R125	E4	R184	E7
R126	E3	R185	E6
R127	F2	R186	E6
R128	F3	R187	E6
		R188	E6

SECTION 4
PARTS LIST

SAFETY PRECAUTION

The parts identified by ! (⚠) mark are critical for safety. Replace only with part number specified.

The mounting position of replacement is to be identical with originals.

The substitute replacement parts which do not have the same safety characteristics as specified in the parts list may create shock, fire or other hazards.

NOTICE

The part number must be used when ordering parts in order to assist in processing, be sure to include the model number and description.

ABBREVIATIONS

1. Integrated Circuit (IC)

2. Capacitor (Cap)

- **Capacitance Tolerance (for Nominal Capacitance more than 10pF)**

Table 4-2-1

Symbol	B	C	D	F	G	J	K	M	N
Tolerance %	± 0.1	± 0.25	± 0.5	± 1	± 2	± 5	± 10	± 20	± 30

Symbol	P	Q	T	U	V	W	X	Y	Z
Tolerance %	+ 100 0	+ 30 − 10	+ 50 − 10	+ 75 − 10	+ 20 − 10	+ 100 − 10	+ 40 − 20	+ 150 − 10	+ 80 − 20

Ex. 10MF J = 10μF ± 5%

- **Capacitance Tolerance (for Nominal Capacitance 10pF or less)**

Table 4-2-2

Symbol	B	C	D	F	G
Tolerance pF	± 0.1	± 0.25	± 0.5	± 1	± 2

Ex. 10pF G = 10pF ± 2pF

3. Resistor (Res)

- **Resistance tolerance**

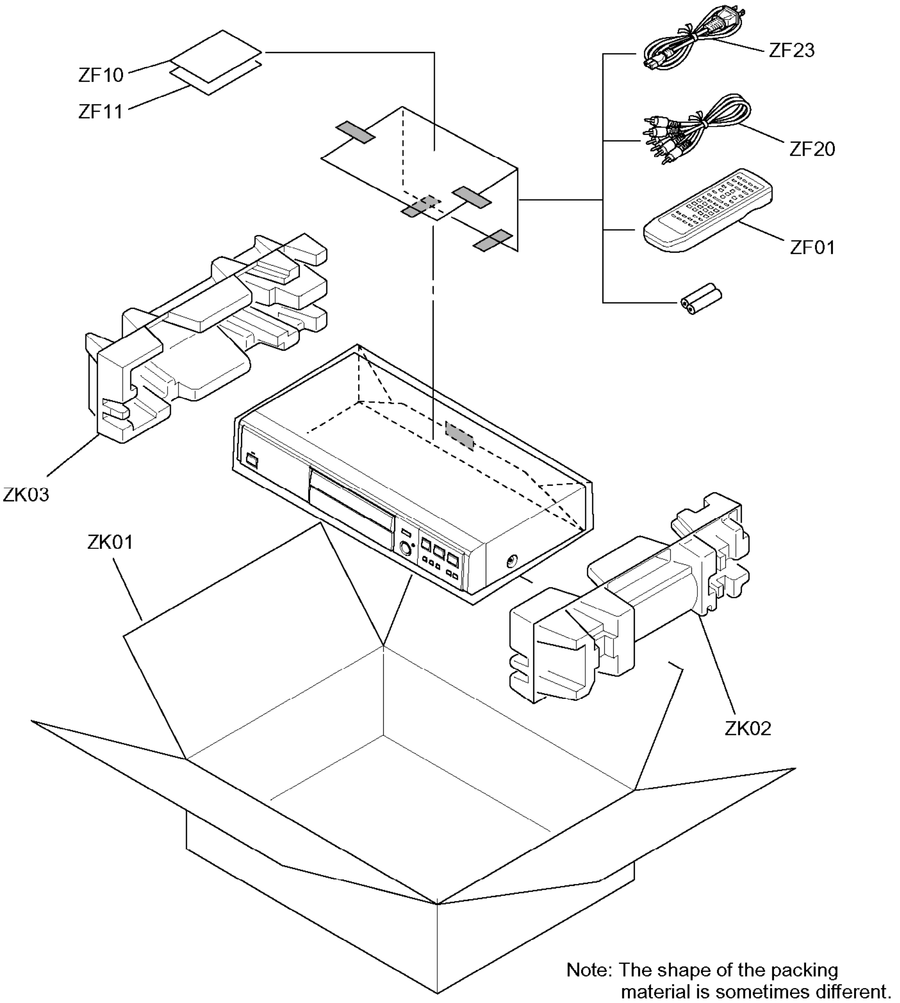
Table 4-3-1

Symbol	B	C	D	F	G	J	K	M
Tolerance %	± 0.1	± 0.25	± 0.5	± 1	± 2	± 5	± 10	± 20

Ex. 470ohm J = 470ohm± 5%

4. EXPLODED VIEWS

4-1. Packing Assembly


ZF10
ZF11
ZF23
ZF20
ZF01
ZK03
ZK01
ZK02

Note: The shape of the packing
material is sometimes different.

Fig. 4-4-1

4-2. Chassis Assembly

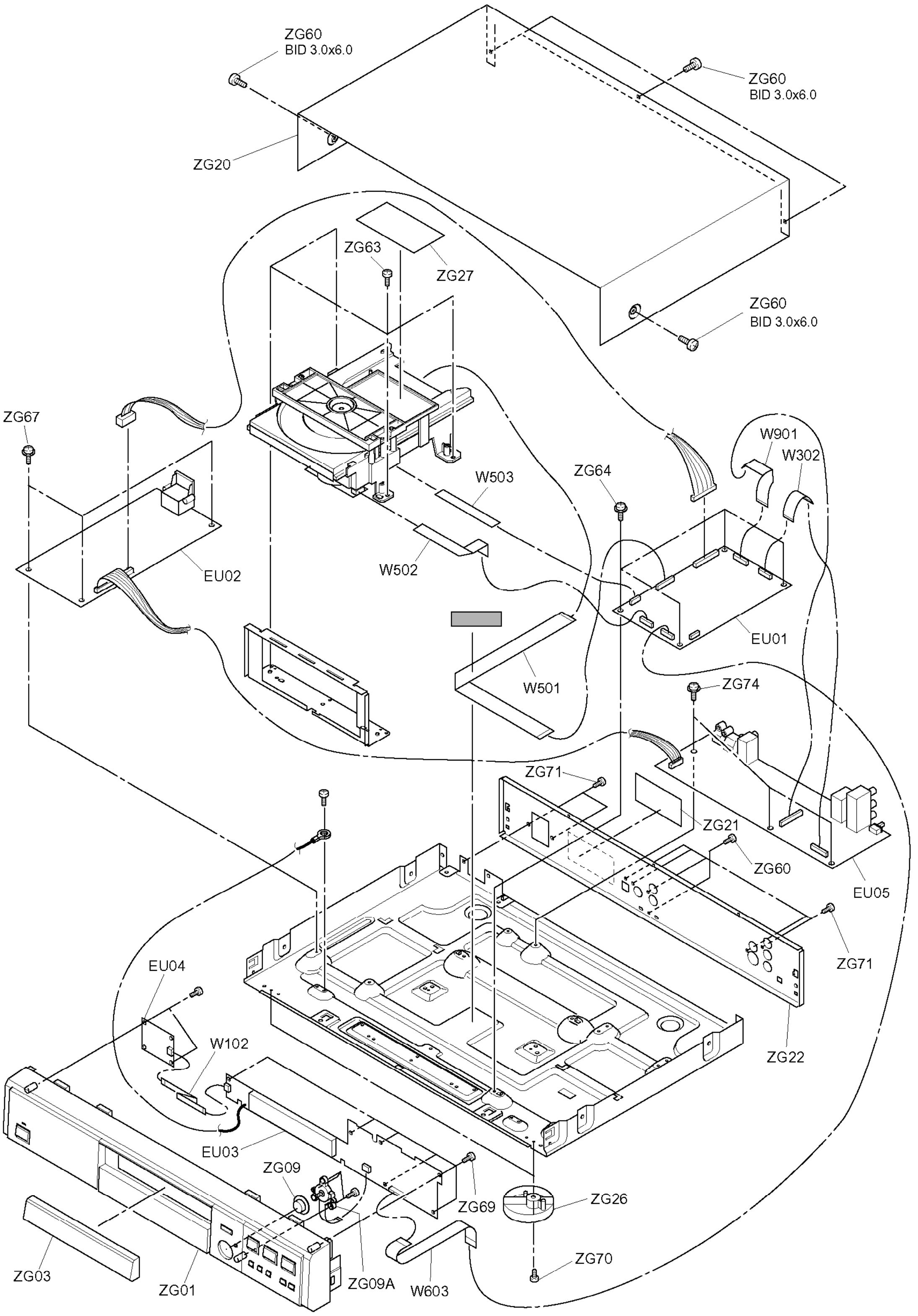

ZG60
BID 3.0x6.0
ZG60
BID 3.0x6.0
ZG20
ZG63
ZG27
ZG60
BID 3.0x6.0
ZG67
W901
W302
W503
ZG64
EU02
W502
EU01
W501
ZG74
ZG71
ZG21
ZG60
EU05
ZG71
EU04
ZG22
W102
EU03
ZG09
ZG69
ZG26
ZG70
ZG03
ZG01
ZG09A
W603

Fig. 4-4-2

4-3. Mechanism Assembly

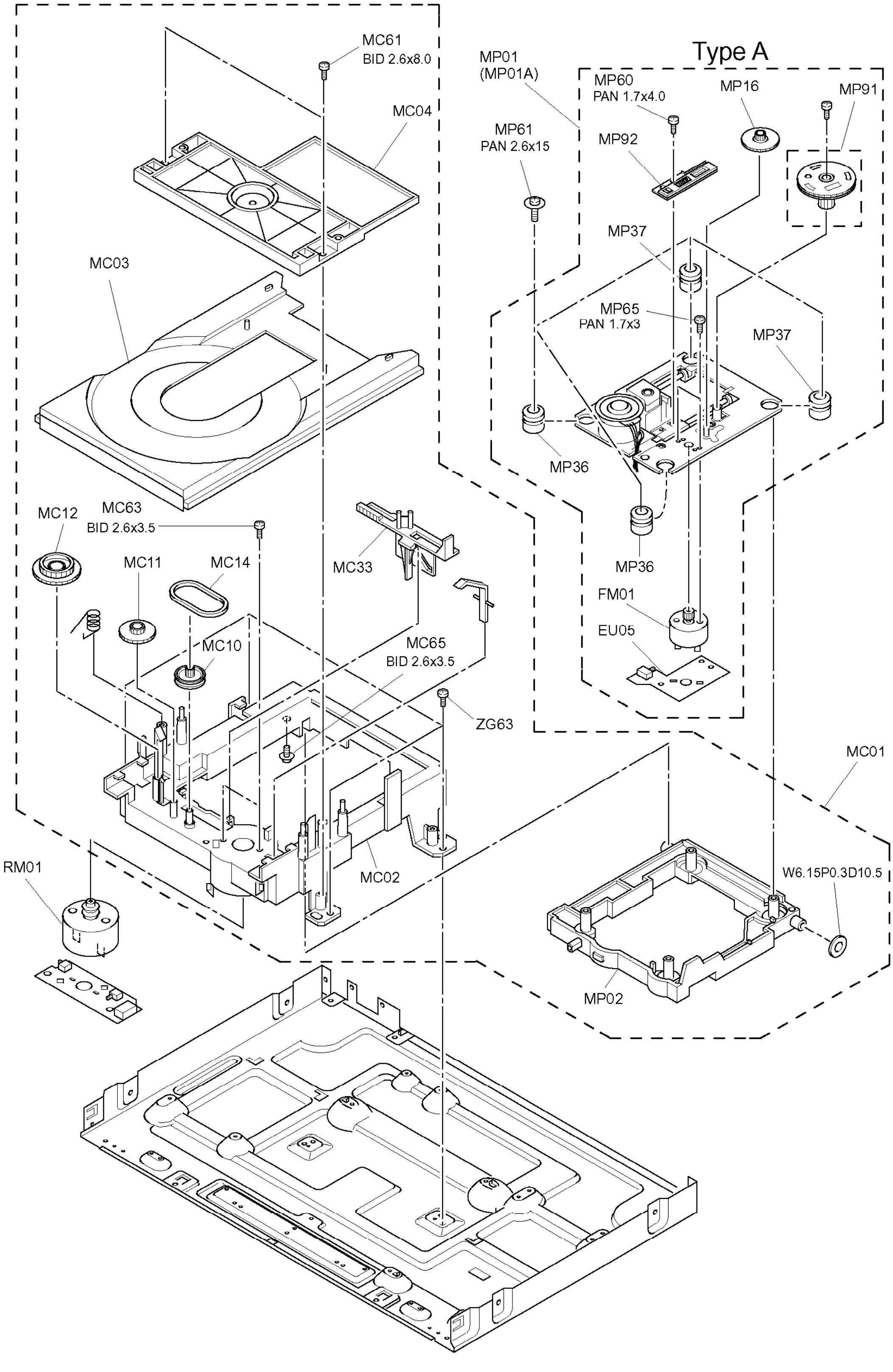

MC61
BID 2.6x8.0
MP01
(MP01A)
Type A
MP60
PAN 1.7x4.0
MP16
MP91
MC04
MP61
PAN 2.6x15
MP92
MP37
MC03
MP65
PAN 1.7x3
MP37
MP36
MC12
MC63
BID 2.6x3.5
MC33
MP36
MC11
MC14
FM01
EU05
MC10
MC65
BID 2.6x3.5
ZG63
MC01
RM01
MC02
W6.15P0.3D10.5
MP02

Fig. 4-4-3

Mechanism Assembly (Type B)

Note:

The pickup mechanism assembly has two types, A and B of which shapes differ.

Only Type A is a service part. Type B can be changed to Type A pickup free from any performance problem.

Type A also has two types, but either of the part can be used for service.

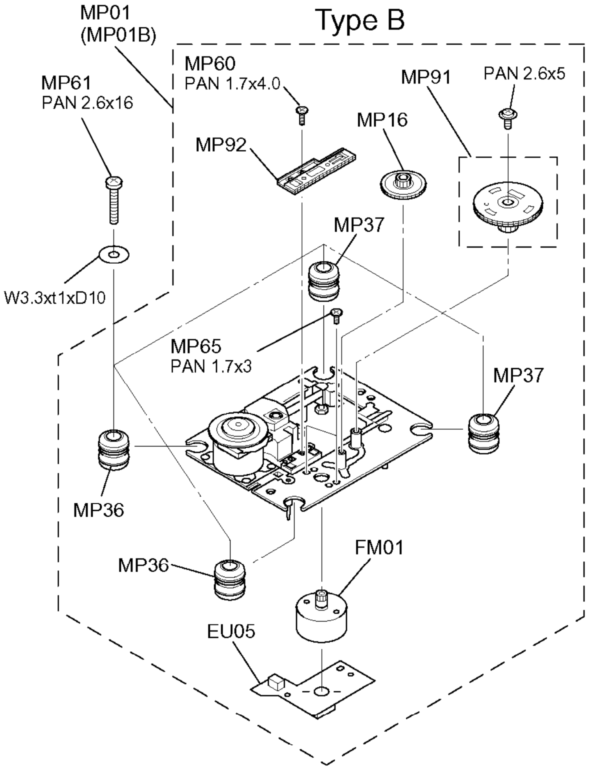

Type B
MP01
(MP01B)
MP61
PAN 2.6x16
W3.3xt1xD10
MP60
PAN 1.7x4.0
MP92
MP91
PAN 2.6x5
MP16
MP37
MP65
PAN 1.7x3
MP37
MP36
MP36
FM01
EU05

Fig. 4-4-4

5.PARTS LIST

	LOCATION NUMBER	PART NUMBER	DESCRIPTION	
			- MECHANICAL PARTS -	
	MC01	79070416	Chassis Assy,Mechanism	
!	MP01	79070489	Mechanism Assy,Pickup,PVR202T-W	
!	MP01	79070470	Mechanism Assy,Pickup,PVR202T	
	MP36	79070458	Rubber,Dumper Kit	
	MP37	79070458	Rubber,Dumper Kit	
	W102	79080145	Cable,Flexible	FFC,4P,L120
	W302	79080256	Cable,Flexible	FFC,18P,L90
	W501	79080273	Cable,Flexible	FFC,23P,L297
	W502	79080192	Cable,Flexible	FFC,6P,L110
	W503	79080193	Cable,Flexible	FFC,8P,L85
	W603	79080279	Cable,Flexible	FFC,18P,L120
	W901	79080236	Cable,Flexible	FFC,26P,L120
	ZF01	79078074	Remote Control Unit,SE-R0058	
!	ZF10	79077161	Owners Manual	English/French,SD-3750
!	ZF10	79077163	Owners Manual	English/French,SD-K700
!	ZF11	79077162	Owners Manual	Spanish
	ZF20	79070037	Cable,AV	
!	ZF23	79088007	Power Cord	
	ZG01	79071215	Front Panel(Black)	SD-3750
	ZG01	79071216	Front Panel(Black)	SD-K700
	ZG03	79071217	Panel,Tray(Black)	
	ZG09	79071211	Key,Cursor(Black)	
	ZG09A	79089157	Switch,Tact	RDSY0010
	ZG20	79073035	Cover,Top	
	ZG20	79073055	Cover,Top	
	ZG26	79073038	Foot Assy	Front
!	ZG27	79070469	Label,Caution	
	ZZ03	79080074	Kit,Data Update	

	LOCATION NUMBER	PART NUMBER	DESCRIPTION		
			- ELECTRICAL PARTS -		
	EU01	79083106	PC Board Assy	Main	
			- INTEGRATED CIRCUITS -		
	IC301	79040007	IC	TC7S08F	
	IC302	79040007	IC	TC7S08F	
	IC303	79040007	IC	TC7S08F	
	IC304	79040248	IC	S-80145CLMC-J16	
	IC305	79040356	IC	W986432DH	
	IC307	79040357	IC	S-24C02AFJA-TB	
	IC309	79040355	IC	MBM29LV160BE90	
	IC310	79040361	IC	MPC2948T	
	IC311	79040247	IC	S-814A33AUC-BCX	
	IC312	79040354	IC	TC74VHCT244AFTE	
	IC313	79040354	IC	TC74VHCT244AFTE	
	IC401	79040282	IC	TC94A03F	
	IC402	79040323	IC	M11B11664A-30T	
	IC501	79040006	IC	TC7S04F	
	IC502	79040296	IC	TA1323F	
	IC503	79040324	IC	BA5813FM-E2	
	IC901	79040227	IC	PLL1700E-T	
	IC902	79040249	IC	TC7SH08FU	
	IC903	79040325	IC	S-814A50AUC-BD0	
	IC904	79040249	IC	TC7SH08FU	
			- TRANSISTORS -		
	Q301	79050018	Transistor,Chip	2SA1162	
	Q302	79050018	Transistor,Chip	2SA1162	
	Q303	79050018	Transistor,Chip	2SA1162	
	Q304	79050018	Transistor,Chip	2SA1162	
	Q305	79050018	Transistor,Chip	2SA1162	
	Q306	79050018	Transistor,Chip	2SA1162	
	Q307	79050043	Transistor,Chip	RN1402	
	Q308	79050001	Transistor,Chip	RN2402	
	Q309	79050043	Transistor,Chip	RN1402	
	Q401	79050085	Transistor,Chip	2SC3326-B	
	Q501	79050015	Transistor,Chip	HN1B01F	
	Q502	79050015	Transistor,Chip	HN1B01F	
	Q503	79050079	Transistor,Chip	2SA1213-Y	
	Q504	79050043	Transistor,Chip	RN1402	
	Q505	79050014	Transistor,Chip	HN1C03F	
			- DIODES -		
	D501	79060022	Diode,Chip	1SS368	
	D502	79060022	Diode,Chip	1SS368	
			- MISCELLANEOUS -		
	X401	79089155	Oscillator,Ceramic	22.58MHz	
	X901	79089003	Oscillator	SMD49,27MHz	
!	EU02	79085082	PC Board Assy	Power	
			- TRANSISTORS -		
!	Q801	79050095	Transistor	FS5KM-16A	
!	Q802	79040327	IC	TA1319AP	
!	Q803	79050041	Photo Coupler	TLP621(GR)	
!	Q804	79050041	Photo Coupler	TLP621(GR)	
	Q821	79040146	IC	TA76431S	
	Q822	79050076	Transistor	2SA1585STP-Q	
	Q823	79050076	Transistor	2SA1585STP-Q	
	Q824	79050077	Transistor	2SC1740STP-Q	
	Q825	79050040	Transistor	2SA1048-Y	
	Q826	79050097	Transistor	2SC3243	
	Q827	79040288	IC	PQ05RD11	
	Q828	79040289	IC	PQ3RD13	
	Q829	79040289	IC	PQ3RD13	
	Q830	79050008	Transistor	RN1201	
			- DIODES -		
!	D801	79060016	Diode	ERA15-06	
!	D802	79060016	Diode	ERA15-06	
!	D803	79060016	Diode	ERA15-06	
!	D804	79060016	Diode	ERA15-06	
	D805	79060009	Diode	RU-1P	
	D806	79060013	Diode	AG01	
	D807	79060080	Diode	AK06	
	D808	79060029	Diode,Zener	6.8V	
	D821	79060010	Diode	RK46	
	D822	79060010	Diode	RK46	
	D823	79060010	Diode	RK46	
	D825	79060008	Diode	RU2YX	
	D826	79060013	Diode	AG01	
	D827	79060013	Diode	AG01	
	D829	79060012	Diode	ERA15-02	
	D830	79060080	Diode	AK06	
	D831	79060080	Diode	AK06	
	D832	79060027	Diode,Zener	UZ12BSB	
	D833	79060027	Diode,Zener	UZ12BSB	
	D834	79060005	Diode,Zener	UZ11BSB	
	D835	79060007	Diode,Zener	UZ3.0BSB	
	D836	79060012	Diode	ERA15-02	
	D838	79060029	Diode,Zener	6.8V	
	D839	79060029	Diode,Zener	6.8V	
	D840	79060029	Diode,Zener	6.8V	
	D841	79060012	Diode	ERA15-02	
			- CAPACITORS -		
!	C801	79020198	Cap,Film	10000pF	M 275V
!	C802	79020198	Cap,Film	10000pF	M 275V
!	C803	79020190	Cap,Ceramic	100pF	M 250V
!	C804	79020190	Cap,Ceramic	100pF	M 250V
!	C811	79020190	Cap,Ceramic	100pF	M 250V
			- MISCELLANEOUS -		
!	F801	79087008	Fuse	1.6A,125V	
!	F821	79087013	Fuse	3.00A,125V	
!	F822	79087009	Fuse	3.50A,125V	
!	F823	79087009	Fuse	3.50A,125V	
!	P802	79089023	Jack	AC Inlet	
!	RF821	79030015	Res,Fusible	2.2ohm	J 1/4W
!	RF822	79030125	Res,Fusible	3.9ohm	J 1/4W
!	T801	79010025	Line Filter	183Y0R5	
!	T802	79010026	Power Transformer	SRW3020ED5-210	
	EU03	79081099	PC Board Assy	Front	
			- INTEGRATED CIRCUITS -		
	IC101	79040358	IC	TMP87CH75F-3D68	
			- DIODES -		
	D103	79060022	Diode,Chip	1SS368	
			- MISCELLANEOUS -		
	A101	79089107	Display,FL	20U47100SAN	
	BZ101	79089156	Buzzer	PKM13EPY	
	MT101	79089146	Module,RMT	GP1U261XK	
	S101	79089020	Switch	Push	
	S102	79089020	Switch	Push	
	S103	79089020	Switch	Push	
	S105	79089020	Switch	Push	
	S106	79089020	Switch	Push	
	S107	79089020	Switch	Push	
	S108	79089020	Switch	Push	
	S109	79089020	Switch	Push	
	S110	79089020	Switch	Push	
	S111	79089020	Switch	Push	
	X101	79089095	Oscillator,Ceramic	8MHz	
	EU04	79081098	PC Board Assy	Power Switch	
			- TRANSISTORS -		
	Q107	79050001	Transistor,Chip	RN2402	
			- DIODES -		
	D106	79060092	Diode,LED	EL31051VRT	
			- MISCELLANEOUS -		
	S113	79089020	Switch	Push	
	EU05	79085088	PC Board Assy	Output	
			- INTEGRATED CIRCUITS -		
	ICX01	79040360	IC	BH7863FS-E2	
	ICY01	79040359	IC	AD1833AST	
	ICY02	79040325	IC	S-814A50AUC-BD0	
	ICY03	79040044	IC	NJM4580E	
	ICY07	79089159	IC	TOTX179	
	ICY09	79040074	IC	TC74HCU04AF	
	ICY13	79040325	IC	S-814A50AUC-BD0	
			- TRANSISTORS -		
	QX02	79050078	Transistor,Chip	DTC114EKA-T	
	QX04	79050078	Transistor,Chip	DTC114EKA-T	
	QX16	79050031	Transistor,Chip	DTA114EKA	
	QY01	79050001	Transistor,Chip	RN2402	
	QY07	79050001	Transistor,Chip	RN2402	
	QY13	79050012	Transistor,Chip	RN4601	
	QY14	79050043	Transistor,Chip	RN1402	
	QY16	79050001	Transistor,Chip	RN2402	
	QY19	79050014	Transistor,Chip	HN1C03F	
	QY27	79050014	Transistor,Chip	HN1C03F	
			- DIODES -		
	DX01	79060028	Diode,Chip	1SS226	
	DX03	79060028	Diode,Chip	1SS226	
	DY01	79060022	Diode,Chip	1SS368	
	DY04	79060022	Diode,Chip	1SS368	
	DY05	79060022	Diode,Chip	1SS368	

LOCATION NUMBER	PART NUMBER	DESCRIPTION	
		- MISCELLANEOUS -	
JX01	79089160	Jack,Video	YKC22-0535
JX02	79089163	Jack,Video	YKC21-8038
JY01	79089162	Jack,Audio,2CH	YKC21-4042
JY03	79089161	Jack,Audio,Digital	YKC21-3895
SX01	79089158	Switch,Slide	SSAA110200

LOCATION NUMBER	PART NUMBER	DESCRIPTION

TOSHIBA CORPORATION
1–1, SHIBAURA 1–CHOME, MINATO–KU, TOKYO 105–8001, JAPAN